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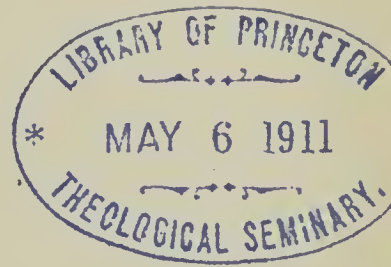
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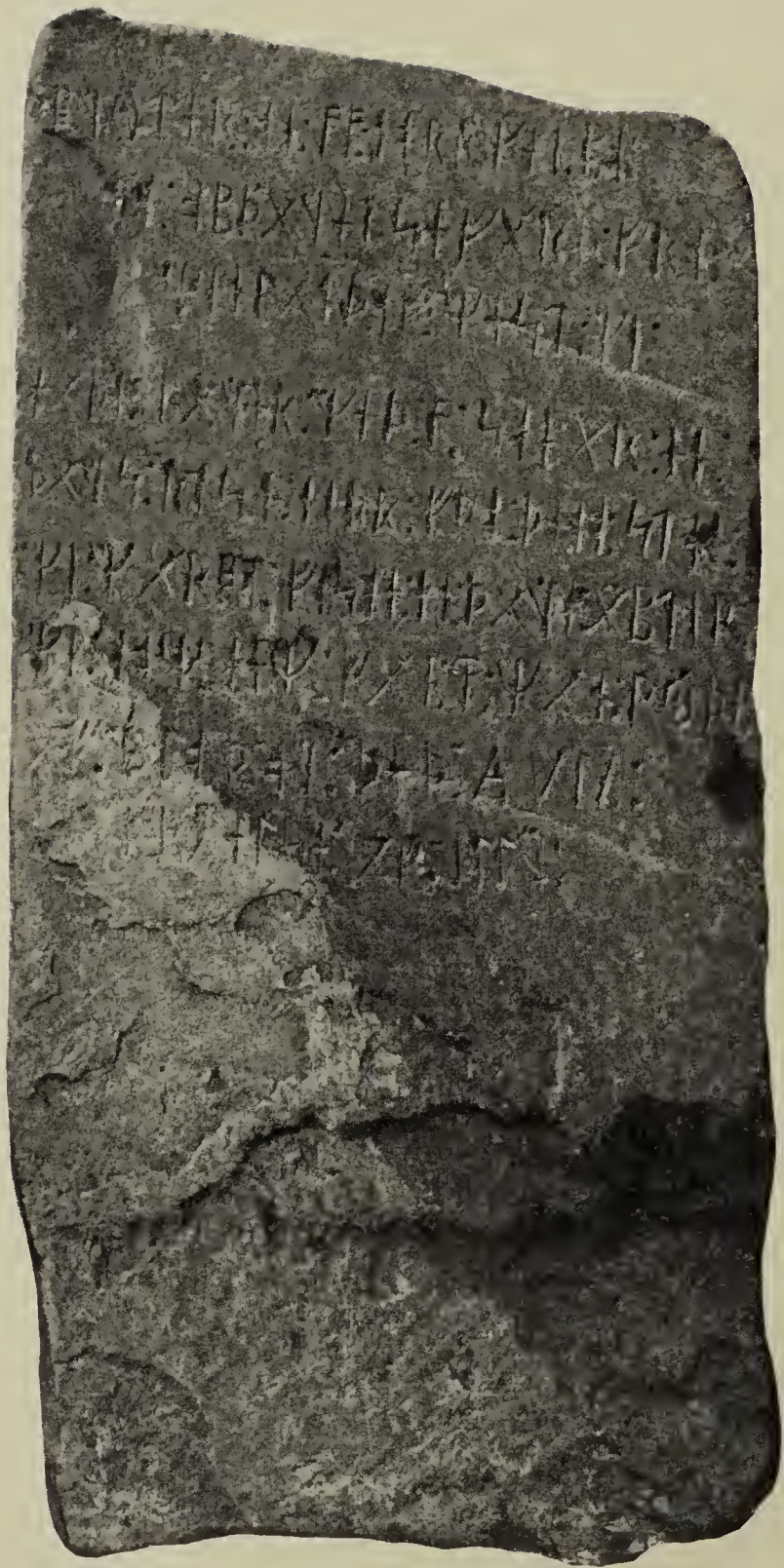
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KENSINGTON RUNE STONE, FACE VIEW

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VOL. IX



PART I

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JANUARY-FEBRUARY 1910



THE KENSINGTON RUNE STONE, ITS DISCOVERY, ITS INSCRIPTIONS AND OPINIONS CONCERNING THEM

IN August, 1898, a Swedish farmer, named Olof Ohman, while clearing off the poplar woods from a part of his farm, in the northeast quarter of section 14, Solem, the most southwestern township of Douglas county, Minnesota, unearthed an inscribed stone, which has since been the subject of much discussion. The locality of the discovery is about 3 miles northerly from Kensington station and village on the Minneapolis, St. Paul and Sault Ste. Marie railway, whence the name applied to the stone is derived.

As the characters inscribed, forming 9 lines on the face of the stone and 3 lines on its edge or side, are arranged like letters and words, though mostly unlike our Roman letters, they were thought by the local school-teacher to be perhaps similar to the ancient runes of Sweden and the other Scandinavian countries and colonies. Therefore the stone was sent to the professor of Scandinavian literature in the University of Minnesota and to other Swedish, Norwegian and Danish scholars in Chicago, who found the characters to be mostly recognizable as runes of the later part of the runic period. But the translation so obtained made the astonishing claim that it was the record of an exploring expedition of Norsemen, coming from the eastern part of New England, or from Nova Scotia, discovered by the Norsemen about the year 1000 A. D. and called Vineland. The occurrence of such a record so far inland, in the western central part of Minnesota, near the geographic center of the continent, was regarded by these translators

as a sufficient proof of its being a fraud of recent date, perpetrated by some Scandinavian settler or visitor for deception of scientists. With this verdict, the rune stone was returned to Mr. Ohman, and for several years it lay neglected in his dooryard.

Although some degree of publicity and popular interest had been attained by the stone soon after its discovery, the adverse decision of the early judges to whom its claims were submitted had caused it to be generally forgotten. But to the farmer and his son, a boy of 10 years, who were working together when the stone was found, it seemed quite impossible, as also to their neighbors, that it could have been placed where it was discovered at any time since the coming of white agricultural settlers, who were the first Scandinavians there within historic knowledge, about the year 1870. For above the stone, which was thinly covered by the surface soil and earth, and was lying flat with its rune-inscribed face downward, a poplar tree 8 or 10 in. in diameter had grown and had sent its main roots down at one side of the stone, while another large root of the same tree crossed the stone and then passed down at its opposite edge. The age of the poplar was evidently 30 or 40 years, showing that the stone lay where it was found before the earliest Scandinavian immigrants came into this part of Minnesota.

New interest in the stone and its inscriptions, and a gradual vindication of their probable truth, after many further adverse criticisms and discussions by runologists in this country and Europe, have come through the work of Hjalmar Rued Holand of Ephraim, Wisconsin, who in 1898, the year of the discovery of this rune stone, was graduated at the University of Wisconsin. A year later he received the A.M. degree there for postgraduate studies. In his subsequent researches on the history of Norwegian immigration to the United States, resulting in a volume of 603 pages, published in 1908, Mr. Holand has visited nearly all places having a considerable number of Norse settlers in the Northwest, including their communities in Douglas county, Minnesota. During these travels, in August, 1907, he learned from Mr. Ohman the circumstances of his finding the rune stone, and obtained it for further investigations, being persuaded that it is what its inscriptions claim. Some deficiencies of the previous translations were filled by Mr. Holand's comparisons with other runic texts. The numerals, especially, which before had baffled interpretation, were ascertained to be like those that came into use in Sweden about 600 years ago, being the numeral characters of medieval almanacs, written in the decimal system.

The stone is about 30 in. long, 16 in. wide and 6 in. thick, and it weighs about 230 pounds. It is a graywacke, of dark gray color, evidently rifted from some large boulder of the glacial drift, which forms the surface of all the region.

On its reverse face, opposite to the face bearing the longer inscription, are several glacial striæ, or scratches and gouge-marks, worn in the stone by its rasping with other drift boulders or pebbles while being carried forward by the ice movement. These markings are very clear cut and have been perfectly preserved during the 7,000 to 10,000 years since the Ice



KENSINGTON RUNE STONE, EDGE VIEW

Age. Hence no surprise or reason for distrust is occasioned by the excellent preservation and unweathered condition of the rune characters.

The locality of the discovery is on the side of a morainic hill of a tract about a quarter of a mile long, inclosed on all sides by areas of swamp, which were doubtless formerly a small lake, making this morainic tract an island. The stone was 40 ft. above the swamp, and about 10 ft. below the top of the hill.

The translation of the inscription on the face of the stone, 9 lines, reads as follows:

“Eight Goths [Swedes] and 22 Norwegians on an exploring journey from Vineland very far west. We had a camp by two skerries [rocks in the water] one day’s journey north from this stone. We were out fishing one day. When we returned home, we found 10 men red with blood and dead. AV. M. [Ave. Maria] Save us from the evil.”

On the edge of the stone an inscription in 3 lines reads thus:

“We have 10 men by the sea to look after our vessel, 14 days’ journey from this island. Year 1362.”

The description of the place of their camp and fishing, and of the massacre of their comrades, a day’s travel north of the rune stone, has led 3 successive observers to search, in the late autumn of 1909, for such a place on the numerous lakes at such a distance northward. Professor Andrew Fossum, of St. Olaf College, Northfield, Minnesota, after examining several lakes, thought the locality might be identified on the eastern part of Lake Christina, about 5 miles long, in the northwest corner of Douglas county. Later searches by Mr. Holand and by Prof. N. H. Winchell, the former state geologist during 30 years, 1872-1902, now the archæologist of the Minnesota Historical Society, lead them to believe confidently that the runic description is better met by a spot on the southwest part of Pelican lake, which is about 4 miles long, in the most northeastern township of Grant county, lying next westward of Lake Christina. This place on Pelican lake, where two large boulders, rising about 6 ft. above the water, lie at the end of a projecting point of the lake shore, is nearly 20 miles north-northwest from the site of the rune stone.

Professor Fossum has published in the *Norwegian American*, Northfield, Minnesota, October 22, 1909, a very interesting theory of the probable route of this exploring party, sailing from some part of our eastern coast through Hudson strait and bay, leaving their vessel, as we may suppose, near the mouths of Nelson and Hayes rivers, ascending with small and portable boats or canoes to Lake Winnipeg, thence up the Red river to its first series of strong rapids and falls, terminating a few miles below Fergus Falls, Minnesota, and thence crossing the country, probably by streams, small lakes, and portages, some 20 miles southeastward to Pelican lake. In the long days of summer, when 15 working hours or more may be rated for a day, and not counting time lost by stormy weather, halts for rest and for fishing and hunting, it may be accepted that 14 such long days of rapid

canoe travel would suffice for the whole inland journey. On the other hand, any route or method of travel then possible in coming directly from Vineland westward, through the region of the St. Lawrence river and its Great Lakes, could not be comprised within so short a time as 14 working days.

In the recent monthly meeting of the Minnesota Historical Society on December 13, 1909, this subject was fully presented by addresses of Mr. Holand, Professors Fossum and Winchell, and Dr. Knut Hoegh, of Minneapolis, the last named having aided much by interviews with Mr. Ohman and his neighbors concerning details of the discovery of the stone.

Mr. Holand took up in serial order the various objections that have been raised against the genuineness of the rune stone, classifying them as general, runic, and linguistic.

The main general obstacle is the great distance inland; for when the Norsemen had colonies in Greenland from 985 A. D. through the ensuing 5 centuries, with expeditions thence to Vineland, identified as Nova Scotia or perhaps eastern Massachusetts, we could somewhat readily accept a runic record if it were found near our northeastern coast. But no insuperable argument can be based on the distance from the coast, as is shown by the practicability of the journey from Hudson bay being made, including all probable delays, in less than one month.

The lack of a European record of this expedition may be perhaps accounted for by the failure of any of these inland explorers to return to their ships. Official memoranda have been found, according to Mr. Holand, showing that the Scandinavian home government in the year 1355 sent out a vessel with a commission to aid the Christian colonies in Greenland, and that it returned in 1364; but no details of the regions visited appear to be extant.

The three other speakers agreed with Mr. Holand in regarding all objections thus far made against the rune stone as answerable by referring the inscriptions to a Swedish priest or scribe accompanying the expedition.

Archbishop Ireland, of St. Paul, after the adjournment of the meeting, in conversation upon examination of the stone, stated that the invocation to the Virgin Mary was in harmony with the religious thought of the Norsemen in the later part of the Middle Ages, but could not be attributed to the present Lutheran Scandinavians, nor would it be likely to be placed in the inscription if it were a modern forgery.

This rune stone, probably almost 5½ centuries old, has been deposited by Mr. Holand in the Museum of the Minnesota Historical Society in the fireproof New Capitol.

WARREN UPHAM.

St. Paul, Minn.





FIG. 2. MILESTONE ON CAMPIDOGGIO, ROME

ROMAN MILESTONES

IT WOULD not be unnatural to assume that when the great system of Roman roads was developed in conjunction with the growth of the army, the formal Roman mind would create coincidentally a system of road measurements and markings. The military roads began as far back as the IV Century B. C.—the Via Appia was built in 312—and a fair assumption would be that milestones came into use only a little later. It was formerly stated, owing to a misinterpretation of a passage in Plutarch,¹ that C. Gracchus was the originator of milestones. The passage merely says that Gracchus was very active in making roads, cuts, fills and bridges, that he built mounting blocks at frequent intervals—quite essential in a land where stirrups were unknown—and that he divided roads into miles and erected pillars of stone to mark the distances. But there is no proof that Gracchus introduced milestones into Rome. It is now quite certain that they much antedate him, for Polybius and Cato, who

¹Plutarch, *C. Gracchus*, 6, 7.

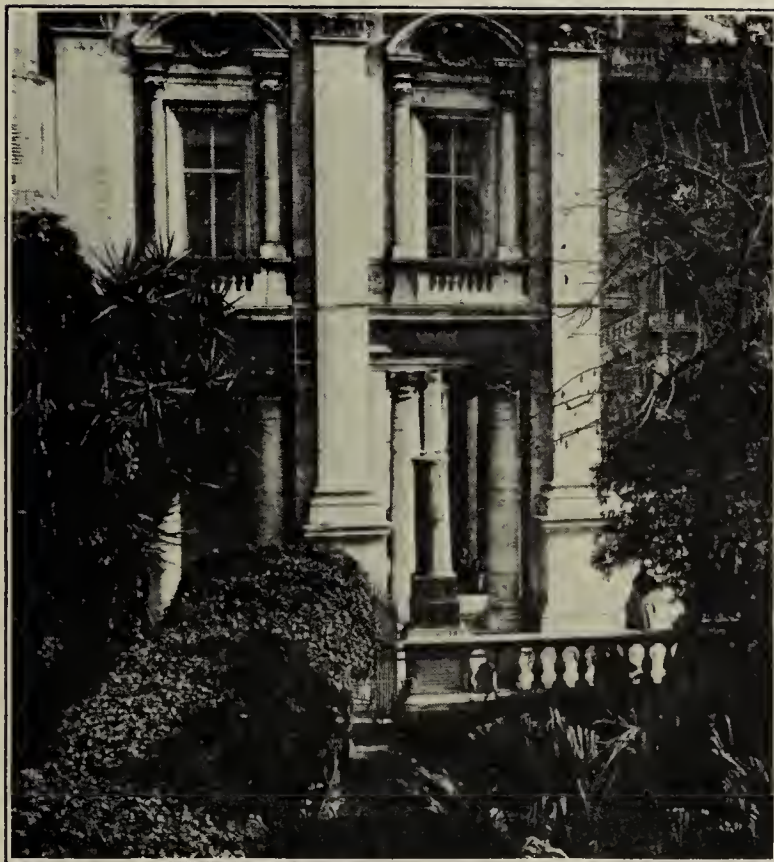


FIG. 6. RESTORED MILESTONE ON CAMPIDOGGIO, ROME

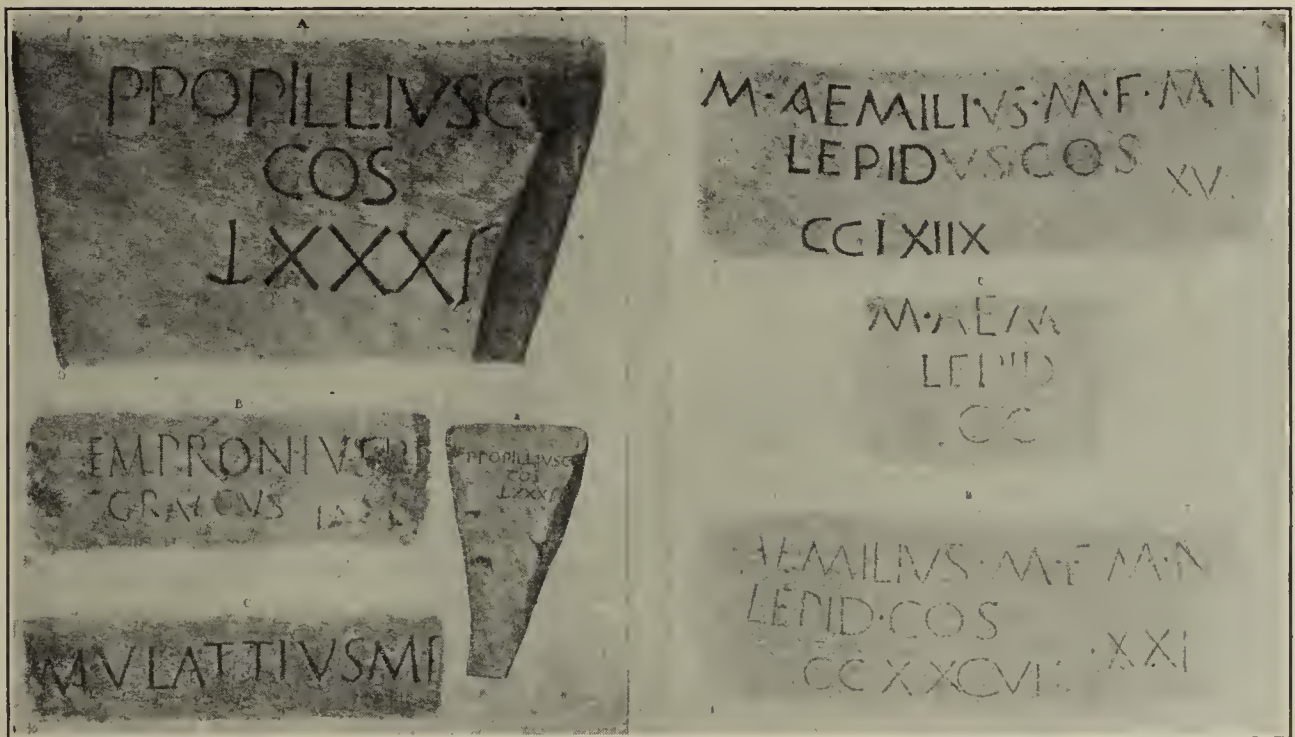


FIG. 4. POPILLIUS MILESTONE INSCRIPTION

FIG. 5 RECENT INSCRIPTION

both died before Gracchus, mention them as though well known. Indeed, there is in existence a stone from the Via Appia showing the consul name of 184 B. C.² (fig. 1). This is thought to be the earliest extant milestone. But, whether they have been destroyed, or whether their use was restricted, republican milestones are very rare. Only 13 are reported in the first volume of the *Corpus of Latin Inscriptions*. Whatever their earliest date, the custom of using them seems to have been indigenous on Roman soil. It may have risen independently elsewhere, for columns placed at regular intervals but without inscriptions have been found in Egypt by Mr. Petrie³ and there was something of the kind in India, but early republican Rome had too little communication with the East to derive the use of milestones from there.

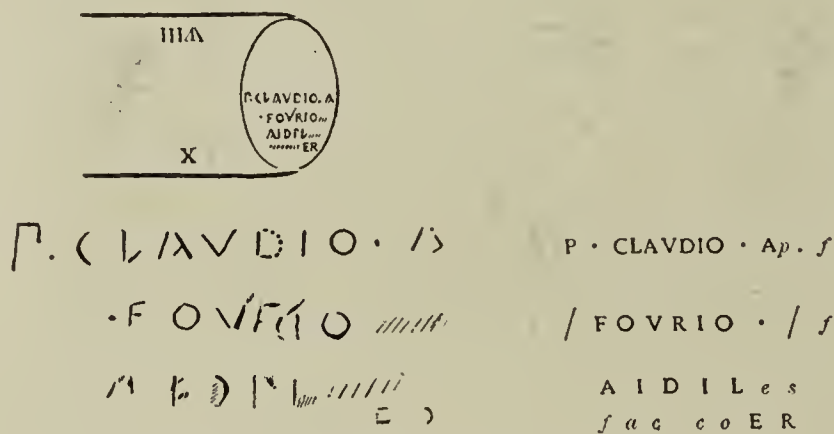


FIG. 1. MILESTONE OF 184 B. C.

As the name indicates, these stones were placed every thousand paces (4850 English ft.) from the beginning of the road, the measurements, in the case of Rome, being made from the gate in the "Servian" wall where the road left the city. The great golden milestone put up afterward in the Forum had nothing whatever to do with the system of milestones on the roads which left Rome. It probably had inscribed on it a list of the great roads and the names of the chief towns on each, with perhaps the distance of each from Rome. In the provinces the measurements were made from the chief cities, or apparently, the cities undertaking the expense of erection.

Under the republic the erection and control of milestones was in the hands of the consuls, the proconsuls, or, in the earliest stones, the aediles. During the empire the *curatores viarum* had charge, and though early Augustan milestones bore the S·C or EX·S·C which indicated senatorial control, this is not found after the beginning of our era. The roads and their milestones from Augustus' time are under the indirect control of the emperor alone.

Four forms of milestones are found: cylindrical (figs. 1, 2), cubical, cippus shaped (fig. 3) and conical. The conventional form is the cylinder, sometimes with a square base for insertion in the ground, and frequently with a simple moulding at the top—perhaps almost always, for very many stones have the top broken off. Some of the earliest cippus shaped stones

²C. I. L. 10,6838 and supplement, p. 1019.

³Hirschfeld *Die römischen Meilensteine*, p. 2.

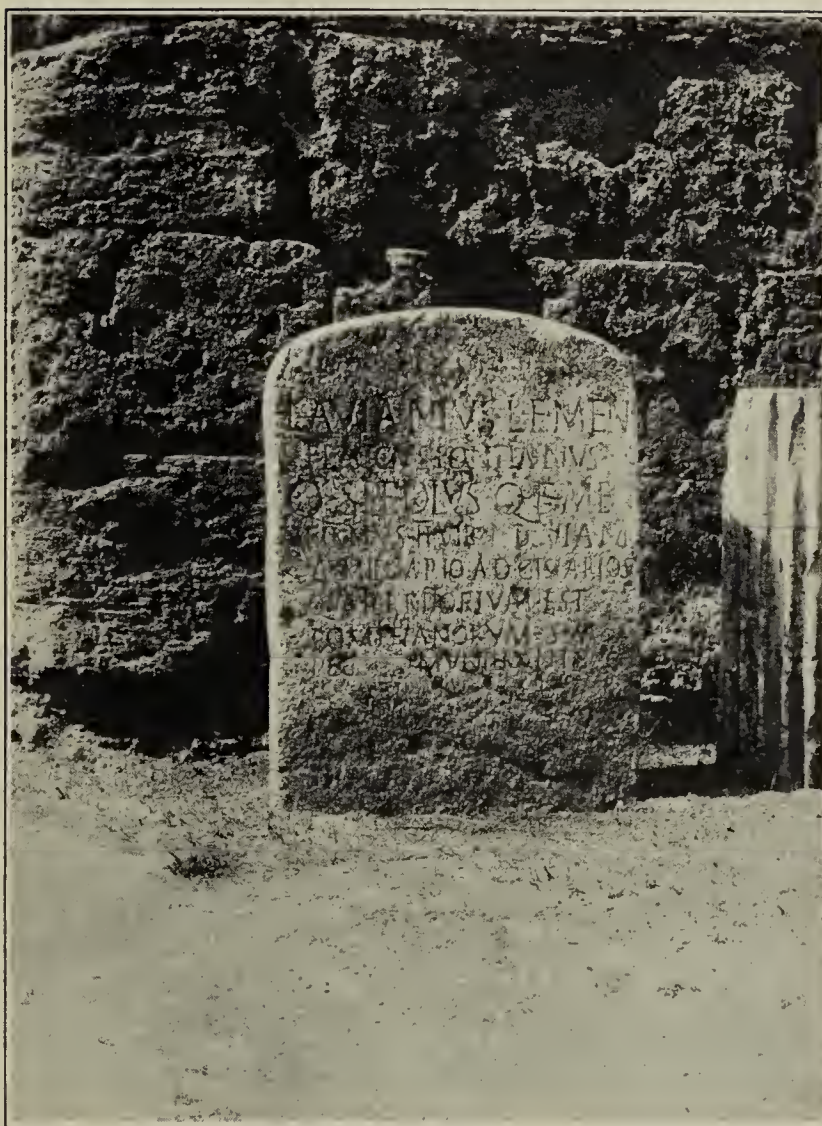


FIG. 3. CIPPUS OUTSIDE STABIAN GATE, POMPEII

have the lower part pointed into a wedge for driving into the ground (fig. 4). Different periods or different emperors have their favorite forms.

There was no standard size. Of the recorded cylindrical milestones, the height ranges from 14 in. to 13 ft., and the diameter from 5 in. to 2 ft. The cippi range in height from 2 to 6 ft. and in breadth from 4 in. to 2 ft. Cone shaped stones were usually low and truncated. Milestones were naturally constructed of some durable material—travertine, marble, granite—found near the place where they were erected.

The inscriptions vary greatly in different periods and under different officials. It would be tempting to say that the earliest milestones have the simplest inscriptions, and that there is a gradually increasing elaboration. In the main, this is true, for in the republican milestones the conventional inscription is the name of the founder of the road or of the official in charge, with the distance, as in the well known Popillius stone of 132 B. C. (fig. 4). But another stone of the same official and the same date shows a very elaborate inscription, which is as much eulogy as milestone. The simplest possible form contains only a number.—XXVIII.⁴ A more

⁴C. I. L., 5, 7985.

In the Orient we find bilingual inscriptions in Greek and Latin;¹⁵ or the inscription is wholly in Latin while the distance is given in both languages.¹⁶ In a stone found in Lycaonia¹⁷ the inscription is in Latin only and the distance in Greek only, PE = 105. All Greek inscriptions are exceptional.

Milestones, when the original location and inscriptions are certain, are manifestly valuable as original documents, and whether the location is known or not, are especially valuable for the titles of emperors. Their value is notably great in the provinces, for of the 4000 extant stones recorded in the *Corpus*, all but 600 are found outside of Italy. In Gaul practically every emperor from the time of Claudius is represented in

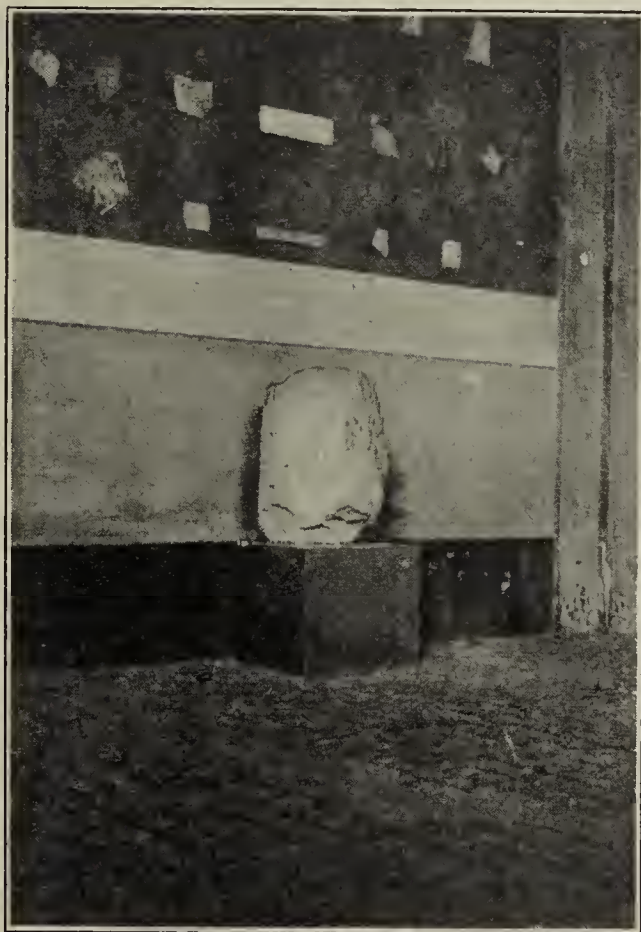


FIG. 7. MILESTONE, LATERAN MUSEUM, ROME

milestone inscriptions. Hence it is clear that they are valuable documents for studying the spread of the Roman Empire and the growth of the provincial system. And they throw interesting light on the general Roman custom of establishing at once military roads in a conquered territory.

But they are not a safe topographical evidence unless used with great care, as many milestones have suffered changes. Their form is not always distinctive enough to identify them if they are not found *in situ*, and it has already been seen that the inscription does not always betray a mile-

¹⁵C. I. L., 3, 7183, 218, etc.

¹⁶C. I. L., 3, 312, 464.

¹⁷Ramsay, *Eastern Provinces*, p. 173.



FIG. 8. ELEVENTH STONE ON VIA LAURENTINA

stone. They were in antiquity notoriously confounded with boundary stones. And there were some later well-meant but unfortunate restorations of inscriptions.¹⁸ Figure 5, for example, shows how an old inscription has been recut on the left side. In recutting, the forms of the A and the P were changed from the original and I was cut instead of the original \perp (CCIXIX instead of CC \perp XIIX), thus obscuring date evidence from the forms of the letters. A and B (fig. 5) were originally on a road 18 (286-268) miles apart. They seem to have been carried to some other road and placed 15 and 21 miles respectively from the terminus. There are some stones which have two different inscriptions on opposite sides¹⁹ or one above the other on the same side, in which case the stone has sometimes been turned upside down and recut.²⁰ Then there are palimpsests formed by recutting a worn stone,²¹ by clipping away the original letters, or even by filling in the old letters with cement and then recutting.²²

Not much topographical proof has been obtained from milestones near Rome, as very few have been found *in situ*. The location of the first

¹⁸ *C. I. L.*, 1, 535.

¹⁹ *C. I. L.*, 9, 5989-92, one of Augustus; one of the IV Century.

²⁰ *C. I. L.*, 5, 8015.

²¹ Ritschl, tab. LVA.

²² *C. I. L.*, 3, 10648.



FIG. 9. MODERN MILESTONE, VIA APPIA NUOVA

milestone on the Via Appia is well known, and is now marked by an inscribed slab on an adjoining building. This gives, of course, an accurate location for the Porta Capena, which was, in fact, definitely located by this means by Mr. Parker. The stone now stands at the top of the Campidoglio steps on the right as one goes up (fig. 2). The other stone on the balustrade (fig. 6) traditionally from the seventh mile of the Via Appia, is thought to be a modern restoration. But most milestones have been discovered in the foundations of modern buildings or so removed from their original location as to lose the source value of accurate measurement. And when found they are usually in bad condition. The only milestone in the Lateran Museum, Rome (fig. 7) is battered almost beyond recognition. Almost no milestones are found *in situ* in Italy. The only one I know of near Rome is the eleventh stone in the Via Laurentina, put up by Tiberius and still legible (fig. 8). An interesting case of the survival—or modern imitation—of the ancient type may be seen in the present day milestones on the roads running out from Rome (fig. 9).

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THE AQUEDUCTS OF THE CITY OF MEXICO

THE Aztec City of Tenochtitlan, as is known, was situated on an island in the midst of Lake Texcoco. Since the water of this lake was extremely alkaline, it was necessary to bring in drinking water from a distance. This was done by means of an open ditch through which the water ran to the lake shore where it was transferred, in skins and other receptacles to canoes and thus transported to the City proper. Later, causeways were built connecting the island with the mainland and on these the aqueducts were erected which brought drinking water to the town.

Two aqueducts supplied the City with water; one began at the springs west of Chapultepec and was known as the San Cosme Aqueduct. This waterway dates from considerably before the conquest, as Cortés in his letters to Charles V gives the following description of it: "Over the one causeway that gives entrance to this great City come two ditches made of lime and sand, each about two paces wide and of the height of a man, and through one of them runs a stream of very good water and sweet, about the size of a man's body, which supplies the main City. The other ditch is empty but serves when it is desired to clean the first." The date of construction of these ditches is unknown, we only know that they were rebuilt in the time of Moctezuma II, or Xocoyotzin.

When Cortés laid siege to the City of Tenochtitlan one of his first acts was to deprive the valiant Mexicans of their drinking water, which he succeeded in doing after a great struggle, and no more water entered the City until after the complete triumph of the Spaniards. "The first command Cortés gave to Guatemuz," says Bernal Diaz, "was that he should repair the ditch in which the water used to come from Chapultepec in order that the same should at once come into the City of Mexico." This waterway came from Chapultepec over the Verónica highway to the Tlaxpana gate and thence by the San Cosme gateway to the beginning of the Calle de Tacuba, where it terminated in a handsome fountain. This work was completed February 5, 1529.

But it was at once seen that this supply was not sufficient for the growing City, and it was planned to bring water from Churubusco; it is not known for a certainty if this was done; if it was, it was but for a short time. During the Government of D. Gaston de Peralta (1566-1568) he tried to bring water from Coyoacan but without success owing to the difficulty in securing a satisfactory gradient. His successor, D. Martin Enríquez (1568-1580) chose the springs of Santa Fé, and in 1570 the City enjoyed the benefit of this water.

This waterway was converted into an aqueduct, the work being commenced by the Marquis of Montes Claros (1603-1607) who carried the works up to San Cosme. This structure was completed by the Marquis of Guadalcazar in 1620. It had something over 900 arches and cost 150,000 pesos. It was 5 m. high and 6 m. 7 in the clear.

Medina (cited by Orozco y Berra) says: "Each arch was 8 varas [the length of the *vera* as now used is about a yard, 33.385 in.] wide, 6 high and



PART OF OLD AQUEDUCT ON THE CALZADA DE CHAPULTEPEC

$1\frac{3}{4}$ thick, the depth of the channel being $\frac{3}{4}$ of a vara.' Its total length was about 4 miles. At a later period this water was run in channels north and south from the fountain at the Calle de Tacuba, and also east of that street to the Plaza.

This interesting structure was destroyed in sections beginning in 1852. When the first section was demolished the fountain which was at the intersection of the Mariscal and Tacuba was removed west to Puente de Alvarado; from this point, as the work of destruction went on, to the Corner of Avenida de Buenavista in 1871; then in 1879 to San Cosme and finally in 1889 to Tlaxpana, the Churrizuresque fountain at this point being the last to disappear.

On one of the arches of this aqueduct was the following inscription:

“Reynando en las Es-
pañas la Catholica
Mag. del Rey
Ntro. Señor D. Phelipe V
El animoso, que Dios guar-
de, Governando esta Nue-
va España El Excmo. S. Conde
de Fuenclara, siendo Supe-
rintendente Juez Conserva-
dor de los propios de la No-
vilissima Ciudad de Mexico el

Sr. D. Domingo Trespalacios
y Escandon, Cavall° del Orden
de Santiago se verificaron estos
Setenta y siete arcos, los quaren-
ta y dos de Oriente y los treinta
y sinco al Poniente.
Año de 1,745.”

TRANSLATION

“During the reign in Spain of his Catholic Majesty, King Philip V, the Bold, whom God guard, and the Government in this New Spain of his Excellency the Count of Fuenclara, the Superintendent of Public Works being D. Domingo Trespalacios y Escandon, Cavallier of the Order of Santiago, these 77 arches were rebuilt, 42 on the east and 35 on the west in the year 1745.”

On the fountain at Tlaxpana was the inscription:

“Reynando en las Españas la
Catolica y Real Magestad del Sr. D.
Felipe V, quien Dios guarde y Gober-
nando en este Reyno el Illmo. y
Excmo. Señor Dr. Don Juan Antonio
Visarron Y Eguiarreta Arzobispo
de la Santa Iglesia de Mexico,
Virrey, Gobernador y Capitan Gene-
ral de la Nueva España y
Presidente de la Real Audiencia
se reedificó este Tramo
de 27 arcos y se hizo de nue-
vo esta fuente en q. c° el ag^a
á de Mai° de 1737.”

TRANSLATION

“Reigning in Spain his Catholic and Royal Majesty, Philip V, whom God guard, and governing in this Kingdom his illustrious excellency Dr. Juan Antonio Vizarron y Eguiarreta, Archbishop of the holy church of Mexico, Viceroy, Governor and Captain-General of New Spain and President of the Royal Audience, this section of 27 arches was rebuilt as well as the fountain in which the water ran May 1737.”

On the fountain at Mariscalá and Tacuba were these words:

“Reinando ē Las Españas i indias Orientales i Occidenta
les la Magd. Católica del Rey Dō Felipe III Ntro. Sob° Sr.
por mādado del Ex° Sr. Dō. Diego Fernādes de Córdoba Marqués
de Gvadalcazar Sr. birrey i Lugarteniēte Gobernador i Ca
pitā General desta Nveba España i Presidēte de la Real A

videncia della se hizo esta obra siendo Correg^{or} el Lido. Dō Gmo. de Monte Alegre i Administrador i Comisar.^o della Dō Fernādo Agvlo Reinoso Regidor desta Cividad de Mexc^o Acabose Año de 1620.”

TRANSLATION

“Reigning in Spain and the East and West Indies his Catholic Majesty King Philip III, our sovereign lord, by order of his excellency D. Diego Fernandez de Cordova, Marquis of Guadalcazar, his Viceroy, and Lt. Governor, and Captain General, of this New Spain and President of the



FOUNTAIN AT CHAPULTEPEC

Royal Audience, this work was accomplished, the licentiate D. Guillermo de Montealegre being Mayor, and alderman D. Fernando de Angulo being Administrador and Auditor of this City of Mexico. It was finished in the year 1620.”

This tablet measured 1 m. 55 long, 0. m. 64 wide and 0. m. 09 thick; it may be seen today in the National Museum. The initial letters are red. Mr. Marroqui in his work on the City of Mexico (*Ciudad de Mexico I.* 249-Note 2; 271) is of opinion that this inscription refers to the Alameda, where it was found, buried in the earth, in 1871, near the San Francisco entrance to that park.

The other aqueduct began near Chapultepec and ran along the highways of Chapultepec and of Belem to its termination at the Salto del Agua, which still stands.

This was finished in 1779 during the viceregency of Don Antonio María de Bucareli. Its length was 3 kilometers 908, and it had 904 arches. This structure also was destroyed in sections, although some 26 arches are still standing on the Calzada de Chapultepec about 2 kilometers from the Piedad gateway, or halfway between the City and the Chapultepec park. On one of the buttresses is the following inscription:

“Bonetes, Mojonera y Lindero pertenec.^e á la Hac.^{da} del Vinculo de Miravalle. Puesta por la N. Ciudad Año 1605 y en su edificio de Arcos el de 1767.”

TRANSLATION

“Boundary lines of the Hacienda of the Vinculo de Miravalle. Placed by the Most Noble City, in the year 1605, and on these arches in 1767.”

The average height of this aqueduct was 4 meters; the channel through which the water coursed was about $\frac{3}{4}$ of a meter wide by about one meter deep. The part standing today is utilized as a reservoir into which water is pumped from the underground mains, and from which the liquid is drawn by carts to water the neighboring highway.

Two of the original fountains stand today, one near the entrance to Chapultepec and the other near Belen prison, a street taking its name therefrom, “El Salto del Agua.”

On either side of the last named are inscriptions which are interesting on account of the data they contain as well as on account of the curious distribution of the lines. The one on the north side reads:

“Reinando la
Catholica Magestad
del Sr. D. Carlos tercero
(que Dios guarde) siendo Virrey, Gobernador y Capitan General de esta N. E. y Presidente de su Real Audiencia el Excomo. Sr. Baylio Frey D. Antonio María Bucareli y Ursua, Caballero Gran Cruz y Comendador de la Tocina en el Orden de San Juan, Gentil Hombre de la Cámara de S. M. con entrada, Teniente General de los Reales Ejército, siendo juez Conservador de los propios y Rentas de esta N. C. el Sr. D. Miguel de Acedo el Consejo de S. M. y Oidor en ella; y siendo Juez Comisionado el Sr. D. Antonio de Mier y Teran, Regidor Perpetuo de esta



FOUNTAIN AT EL SALTO DEL AGUA

N. C. se acabaron esta Arquería y Caja en
20 de Marzo de mil setecientos setenta y
nueve.”

TRANSLATION

“Reigning his Catholic Majesty Charles Third (whom God guard) being Viceroy, Governor and Captain General of this New Spain and President of his Royal Audience, his excellency Bailio Frey D. Antonio María Bucareli y Ursúa, Knight Grand Cross and Commander of the Fleece in the order of St. John, Gentleman of his Majesty’s bed chamber, with entrance, Lt. General of the Royal Armies, being Judge Treasurer of this Most Noble City D. Miguel de Acedo of his Majesty’s Council and Magistrate therein, and being Judge-Commissioner D. Antonio Mier y Teran, Alderman for life of this Most Noble City, these arches and canal were finished March 20th. 1779.”

On the south side were the following words:

“Se advierte de distan-
cia desde la toma en la Alber-
ca hasta esta Caja 4663 varas
y desde el Puente de Chapulte-

pec 904 arcos- y habiendose hecho varios experimentos, para dar la mayor elevación y mas fuerte impulso á la Agua se consiguió el de vara y tres cuartas mas de las que tiempo de esta nueva arquería tenía siendo así que se hallo que los Señores Gobernadores anteriores la elevaron á la tarjea poco mas de vara. De donde se ve que en esta ultima construcción se ha conseguido llegar á la de dos varas y tres cuartas de altitud mas de la que en su origen tuvo, precediendo, (como va dicho) varios prolijos y esquisitos experimentos.”

TRANSLATION

“Be it known that the distance from the reservoir to this fountain is 4663 varas and from the bridge at Chapultepec there are 904 arches and having made various experiments with a view to giving a greater elevation and the strongest current to the water, an elevation was taken of $1\frac{3}{4}$ varas more than previously existed, as the original elevation was but little over one vara. From which it will be seen that the present elevation is about $2\frac{3}{4}$ varas above the point of origin, the result (as has been said) of long and careful experiments.”

Thus for the old.

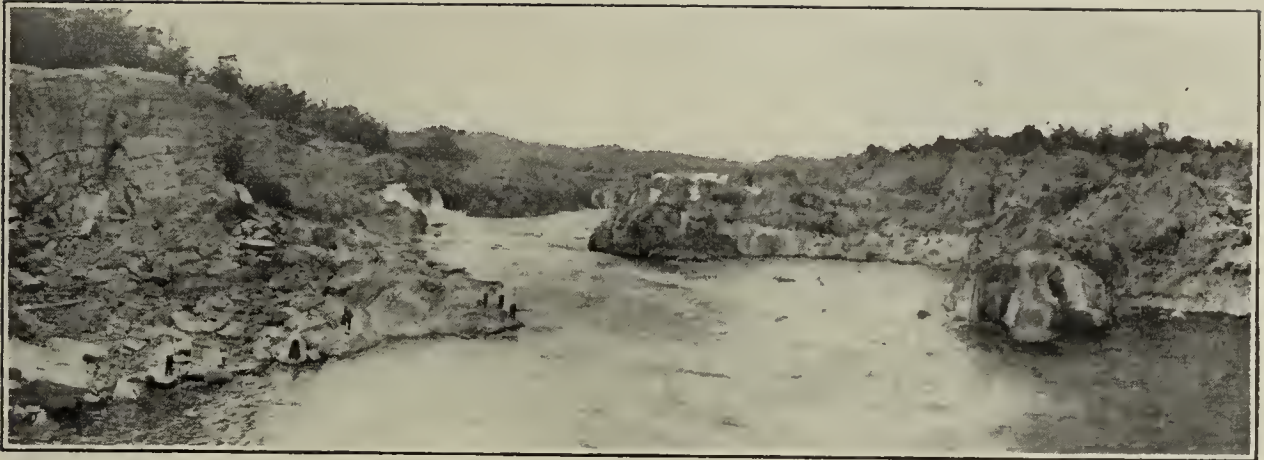
Today, the City is preparing to furnish great quantities of purest water drawn from springs bubbling up in the bottom of Lake Xochimilco at an expense of millions of pesos.

A. L. VAN ANTWERP.

City of Mexico.



ROMAN PAVEMENT AT CIRENCESTER.—Early in September, 1909, workmen engaged in putting in a drain at Cirencester, Gloucestershire, came upon the edge of a piece of tessellated pavement, 4 ft. below the surface. A portion of Roman pavement some 10 by 7 ft. was thereupon laid bare, showing perfect symmetrical ornamental and floral designs in fine colors. “The main features are a broad plait, and bell-shaped flowers in alternate rows.” Near by was a smaller pattern of less color. It is hoped that the larger specimen can be removed intact to a museum near at hand.



GREAT FALLS OF THE POTOMAC

Photo by Thomas F. Nelson.

WASHINGTON'S CANAL AROUND THE GREAT FALLS OF THE POTOMAC

ON THE Virginia side of the Potomac river about half a mile below the Great Falls, lying deep down within a thicket of tangled underbrush, are huge crumbling walls of massive masonry and a great cleft in the solid rock carved out to a depth of well nigh 200 feet—all that remains of the first efforts of the promoters of an infant nation to establish a means of unobstructed water communication and transportation between the interior and tide-water.

No more convincing argument for the greatness of George Washington could be presented to the average mind than that furnished by following step by step the rise and decline of this now historic ruin—the Potomac Canal around the Great Falls of the Potomac river.¹

Inter-communication between the coast and the fertile valleys of the frontier was the theme and thought alike of statesman and husbandman for more than a decade prior to the separation of the Colonies from English rule. Natural water-ways were at that time resorted to as the only medium that afforded means of transportation, and this was restricted by reason of the cost in time and labor caused by the frequent obstructions and rapid currents in such streams as could be thus used even by canoes and very small barges. Slack-water navigation was therefore impossible upon natural water courses, hence transportation under existing conditions, even down stream, encountered obstacles almost insurmountable, while the snail-like pace and excessive labor of the return trip up-stream against the current by poling and warping, was scarcely to be considered at all.

Washington after surrendering to Congress his commission as commander-in-chief of the army, retired to Mt. Vernon with the avowed intention of spending the remainder of his days in the avocations of peace. It

¹ Visitors to this historic ruin can reach the spot by the "Old Dominion Electric" from Georgetown, D. C.



GREAT FALLS OF THE POTOMAC FROM THE MARYLAND SIDE

Photo by Miss A. Pratt.

was not a life of selfish ease which he contemplated but an opportunity to consider plans formed many years before, the dominant feature of which involved "the greatest good to the greatest number;" hence it is no surprise to learn of his resolve to visit at this time his lands situated in the Ohio Valley. This was not only a trip involving great hardship and considerable peril but it afforded the opportunity which he desired to obtain by observation some information concerning his "favorite plan" for inland navigation.

Washington's diary covers the details of the journey commencing with his departure from Mt. Vernon on the first day of September, 1784, and from its pages we learn that one object of his journey was "to obtain information of the nearest and best communication between the Eastern & Western Waters; & to facilitate as much as in me lays the Inland Navigation of the Potomack." This was uppermost in his mind, for he commenced his inquiries in that direction on the third day. On the 6th of September his diary tells us he remained all day at Bath and there examined the "Model of a Boat constructed by the ingenious Mr. Rumsey" to whom he gave the following letter:²

"I have seen the model of Mr. Rumsey's Boats constructed to work against stream;—have examined the power upon which it acts:—have been an eye witness to an actual experiment in running water of some rapidity; & do give it as my opinion (altho I had little faith before) that he has discovered the art of propelling Boats, by mechanism & small manual

² Washington, MSS. Letter Book in the Library of Congress, Vol. 6, p. 262.

assistance, against rapid currents;—that the discovery is of vast importance—may be of the greatest usefulness in our inland navigation—& if it succeeds, of which I have no doubt, that the value of it is greatly enhanced by the simplicity of the works, which when seen & explained to, might be executed by the most common mechanics.

“Given under my hand at the town of Bath, County of Berkeley in the State of Virginia this 7th day of Sept, 1784.

GEORGE WASHINGTON”

Here was the inspiration that created the canal around the Great Falls of the Potomac.

Washington continued his journey into Western Pennsylvania. Returning he arrived at Mt. Vernon on the 4th October “having travelled on the same horses since the first day of September by the computed distances 680 miles.”



LOCK NUMBER I

Photo by Thomas F. Nelson.

Prior to the 6th of September there is no suggestion that Washington ever contemplated as a part of his “favorite plan” any such improvement of the Potomac river as would permit navigation by boats of any considerable size, or that would overcome such an obstacle to unobstructed navigation as the Great Falls.

No such colossal work as that which was actually begun but a few months later in the construction of the canal around Great Falls could have been contemplated under the then existing conditions of navigation; Washington’s “favorite plan” was broadened and deepened by the actual experiment which he had just witnessed in the trial of Rumsey’s boat; hence when he returned to Mt. Vernon a month later the whole project

had been fully considered and he was prepared to act. In less than 3 months the Potomac Company was incorporated by concurrent legislative enactments in Maryland and Virginia and on the 7th of May, 1785, organization was effected and George Washington became the first President of the Potomac Company, in which capacity he acted until called to fill a more exalted place—that of First President of the United States of America.

The unselfishness of Washington could not be illustrated in a better manner than by referring to his embarrassment following the action of the Virginia Legislature which by a unanimous vote authorized the treasurer of the State to subscribe for certain shares of the stock “for the benefit of General Washington” in both the James River Company and the Poto-



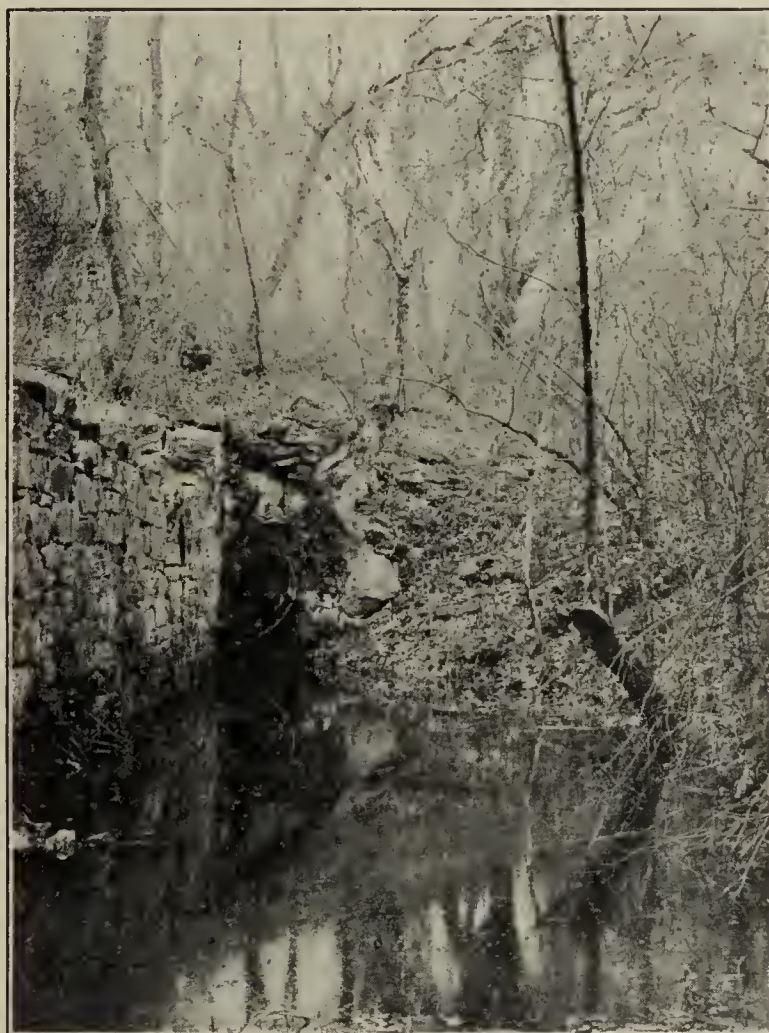
LOCK NUMBER 2

Photo by Thomas F. Nelson.

mac Company which they had just created by acts of incorporation. When the intelligence reached him of this action, he expressed the gratitude which he felt for the affection displayed, likewise the embarrassment under which he was thereby placed should he decline to accept the benefit proffered in the Act. He feared that his activity in the matter would be ascribed to motives far removed from those which actuated him. In a letter to his nearest personal friends in which he seeks their advice he expresses himself thus: “not content then with the bare consciousness of my having in all this navigation business acted upon the clearest conviction of the political importance of the measure, I would wish that every individual who may hear that it was a favorite plan of mine, may know also, that I had no other motive for promoting it, than the advantage of which I conceived it would

be productive to the Union at large, and to this state in particular, by cementing the eastern and western territory together, at the same time it will give vigour and increase to our commerce and be a convenience to our citizens."³

Washington did not live to see the fruition of his "favorite plan." The work on the canal around Great Falls was only in that condition which might be described as well nigh completed when he was laid to rest at Mt. Vernon. In November, 1797, the "Patowmack Company" recites in their petition set forth in the preamble to an Act of the Maryland General Assembly "that the company, to facilitate the transportation of produce down



LOCK NUMBER 3

Photo by Thomas F. Nelson.

said river, have constructed an inclined plane from the lower end of the canal to the surface of the river below the Great Falls, by means of which machine all articles can be let down, and those not of great bulk or weight taken up with security and despatch; that a warehouse is also provided for storing such articles when found necessary, or when boats are not ready for transporting said produce down the said river."⁴ The locks around Little Falls

³ Washington's MSS. Letter book in the Library of Congress, Vol. 6, p. 335 dated twenty-second January, 1785, to Hon. Benjamin Harrison and another of same date to Hon. Wm. Grayson.

⁴ *Laws of Maryland*, Chap. 93, November, 1797.



LOCKS 4 AND 5 LOOKING OUT ACROSS THE POTOMAC TOWARDS THE MARYLAND
SIDE

Photo by Thomas F. Nelson



LOCKS 4 AND 5 LOOKING IN FROM THE POTOMAC RIVER

Photo by Thomas F. Nelson.

were at this time completed and in use. The time for completing the work of opening the Potomac river to navigation was extended by the same Act of the Maryland Assembly to January, 1803.

The great magnitude of the work involved in surmounting the obstacle to navigation interposed by these Falls is set forth in a Report of the Secretary of the Treasury by resolution of the United States Senate, 2 March, 1807, as follows: "The Company incorporated by the States of Virginia and Maryland for improving the navigation of the Potomac river has executed the following works: At a distance of 12 miles above the head of the tide which ascends about 3 miles above the city of Washington, the river is 143 ft. higher than tide-water. At that place designated by the name Great Falls, the boats passing through a canal one mile in length, 6 ft. deep and 25 ft. wide, descend 76 ft. by 5 locks 100 ft. long and 12 ft. wide each and re-entering the river follow its natural bed 8½ miles. Another canal of the same dimensions and 2½ miles in length brings them through 3 locks and by a descent of 37 ft. to tide-water. This last fall is distinguished by the name of Little Falls."⁵

The decline of the Potomac Company began almost simultaneously with the completion of the work on the Canal around the Great Falls and was finished when its charter and property was transferred to the Chesapeake and Ohio Canal Company in 1825 and the utilization of the natural bed of the Potomac river for transportation purposes was abandoned for still-water navigation offered by means of a canal constructed along the banks on the Maryland side of the river. The works on the Virginia side of the river were abandoned and now there remain only faint traces of their existence aside from the massive walls of cut stone and the great rift in the solid rock that marks the place where these great locks were constructed—mute but impressive monuments to one who stands unchallenged the greatest man in America as well as "The Father of his Country."

This bit of history may serve to call attention to the great question of the conservation and utilization of the water-ways of the Nation. Perhaps it may become apparent at no very remote date that Washington's "favorite plan" was not all a dream or as impracticable as would appear from the fact that this initial effort at the inland navigation of our natural water-ways was a failure and has been a ruin for well-nigh one hundred years.

What obstacle—except the great cost of construction—is to be surmounted in confining such natural water-ways within adequate limits and utilizing the enormous forces of nature therein contained to produce light, heat and power from every gallon of water that precipitation deposits within the water-shed of any stream and withholding the surplus precipitation of the snows of winter and the showers of the spring in storage canals which can be successively drawn upon as needed throughout the year. If this be too Utopian for the present day we are content to leave this record for the information of the historian one hundred years hence.

THOMAS FORSYTHE NELSON.

Washington, D. C

⁵ See also *House Report*, No. 228, dated May 22, 1826. Serial No. 142.

A STUDY IN ROMAN COINS OF THE EMPIRE¹

OUT of a large collection of old coins which came into my hands some three years ago, I have chosen a dozen pieces, dating from the early reigns of the Principate, upon which to base the appended discussion. These 12 not only represent one of the most famous series in all the history of numismatics, but are valuable as illustrating the development of the coinage-art in Rome.

By formal enactment of 15 B. C., either at the instigation of Augustus or, with his approval, the coinage of bronze or copper money was relegated to the Senate solely, that of silver and gold being reserved by the Emperor. The senatorial mintage was thereafter for more than three centuries, *i. e.*, from Augustus to Gallienus, designated by the stamp of the letters S. C. upon the reverse, the initials of the formula SENATVS. CONSVLTO, "by decree of the Senate." The sestertius, the largest in the new classification, popularly styled "the large bronze" or "first brass," was, in its earliest stages, somewhat smaller than the American dollar. Its name had been formerly employed in the silver coinage of the Republic, where it originally denoted "two and one-half asses," at a time when this latter coin (bronze) had fallen to two ounces in value. But, as the bronze coins of that era fell still lower while silver money remained stationary in value the silver sestertius, in spite of its name, came to be valued actually at 4 asses. And, now that a new bronze coin was adopted under the revised system as a substitute for the old silver one, its present value of 4 asses was assumed, together with the old name, without reference to its original meaning. It was practically a Roman ounce in weight.

Next of the new bronze coins in value and size was the dupondius, whose name also is a relic of ancient nomenclature, formerly denoting "two pounds," *i. e.*, "two asses" when the as weighed one pound, but now meaning simply two asses irrespective of weight. Thus the sestertius and the dupondius represent respectively four and two asses, the latter coin being of half the value of the former and about one-half an ounce in weight. Both these pieces were of brass, "aurichalcum," described as "a fine yellow metal, composed $\frac{1}{3}$ of copper and $\frac{1}{3}$ of zinc."

Side by side with these two new coins of brass, the as, sometimes termed assarius and now but a remnant of its former austerity, was continued under authority of the Senate and adopted as a third in the series. It is surprising to find the dupondius and as of the Empire almost identical in size, both being a little less in diameter than our half-dollar. In weight also there was but slight difference, the as averaging only about 14 grains less than the dupondius. The difference in color, too, is often inappreciable. To such a degree do they resemble that both pass, without attempt to discriminate, under the common parlance of "middle brass." This seeming equality was of course offset by a disparity in actual value, for the metal of the as was inferior—copper alloyed with 30 per cent of tin and lead, so that it was really one-half the value of the dupondius. During

¹ Reprinted in part from University of Oregon Bulletin, by special permission.

the earlier reigns especially, the two varieties of "middle brass" are almost indistinguishable to the eye, but, after Nero's time, it came to be the practice to designate them by a difference in the mode of displaying the Emperor's portrait. The dupondius thereafter represented the Emperor with radiate crown, the as with laurel crown or with no head adornment at all.

A comparison of the selected coins will reveal some general features running through the entire group. The obverse, or chief face, invariably contains a portrait in profile, usually of the reigning Emperor, though other members of the imperial household, male and female, even deceased ones, were also honored. The portrait is surrounded on the edge of the coin by an inscription giving the name of the personage in whose honor the coin was struck, with partial or complete list of titles prefixed and appended. The reverses vary considerably—either depicting some historical and current event in allegorical representation, or commemorating some virtue or quality in the person honored, surrounded also, as in the obverse, by an inscription of corresponding nature. The S. C., pledge of mintage under senatorial supervision, always appears on the reverse. Thus we have on the one hand, in the obverses, a perfect portrait gallery of the imperial families, and on the other, in the reverses, a perpetual succession of history or biography exhibited in personification and allegory.

By chance, the reign of Trajan is reached in order of chronology before an example of the sestertius or "first brass" is met with in the collection, the first few coins all being "middle brass," *i. e.*, dupondii and asses. Three of these belong to the Julian-Claudian House, 3 to the Flavians, and 5 to Trajan himself, before the above-mentioned sestertius is reached in the list.

THE JULIAN-CLAUDIAN ERA

AUGUSTUS, 27 B. C.—14 A. D. TIBERIUS, 14—37 A. D.

The first in the series of Imperial bronzes is a "middle brass," belonging in a way both to Augustus and to his successor, Tiberius, for it is one of the several coins struck by the latter in honor of the deified founder of the Empire. Its portrait and inscription belong to Augustus, though it could not have been struck until after his death and therefore dates from the reign of Tiberius.

The obverse (Pl. I, fig. 1) bears the head of Augustus in left profile—a youthful face, rather resembling the portrait-bust in the Glyptothek at Munich—so chosen, no doubt, to indicate his restored and perennial youth as a god. He wears, as a symbol of his apotheosis, the "corona radiata," a crown with long, upward spikes, a frequent representation of divinity, first met with on oriental Greek coins of Alexander and his successors in Egypt and Syria. It eventually became a rather conspicuous emblem on Roman money, for Nero, as has already been remarked, inaugurated the practice of having the Emperor represented with radiate crown, as being deified while still living and reigning.

Though the first word in the inscription surrounding the head of Augustus is somewhat indistinct, it may be readily supplied, for the formula is abundantly attested from similar coins. The restored legend reads: DIVVS.AVGVSTVS.PATER, "the deified Augustus, Father." The lettering is in the large, clear style prevailing in the coinage of the early Principate and made possible by the greater simplicity in the list of titles.

DIVVS we shall have occasion to note in the next coin also, a coin of Caligula's reign. Both "divus" and its feminine form "diva" were titles indicative of deification, a distinction frequently accorded after the death of an Emperor or his wife, or, less frequently, some other member of the imperial family. The presence of the name in inscriptions naturally relegates the date of a monument or coin to a time subsequent to the decease of the person so designated. Conversely, its absence from a disputed inscription is often evidence of a date contemporaneous with the life of the person named.

Since the conferring of the complimentary epithet of Augustus on January 16 of 27 B. C., Octavius had allowed it to supersede all his other possible titles. In the same degree it was coveted by his successors, first as a family name by the Claudian-Julians and thereafter by all the line of Imperators.

The term PATER expresses much more than the filial duty of Tiberius to his adoptive father. It must be remembered that the Senate, not the Emperor, was now responsible for the bronze coins, though individual Emperors may have advised or even dictated the types, and again it is also true that the Senate often followed the designs employed by the Emperor in the silver and gold coins. PATER is rather the echo of the honored title which Augustus bore in his lifetime—Pater Patriae, "Father of His Country." Taken in conjunction with the title DIVVS, it is suggestive that the now translated Augustus was taken to be a parental god of his nation.

In passing to the reverse (Pl. II, fig. 1) by inverting end over end, the axes of the two faces of this coin are found not to be exactly coincident—the head of Augustus must be tilted slightly downward to the left in order to bring the reverse quite "plumb." This lack of symmetric nicety characterized the coinage of the early Principate until greater precision came in under Nero and Trajan.

The reverse has a large altar occupying the center and upper portion flanked by the initial letters S. C, and with the abbreviated word PROVIDENT. in the exergue below. Certain irregularities at the top of the coin above the altar may represent flames, as may be seen in some coins of similar design. The frequency of the so-called "Providence type" marks it a popular device for the reverse. Down through the list of reigns it recurs again and again, now in an abbreviated form, as here, or at other times with the entire formula, PROVIDENTIA.AVGVSTI, or perhaps PROVIDENTIAE.DEORVM. This Augustan coin probably conveys, in the presence of a lighted altar, and with the dedication expressed in the dative case, the universal feeling that, in Augustus, the gods had given

to the world a personal evidence of their "foresight," or it may denote the present "providence" now exercised over his people by the deified Emperor.

As for the S. C., coins of succeeding reigns reduced them to much smaller proportions, but in the money of the earlier Julian-Claudians they are very prominent, often forming the sole device of the reverse and occupying the entire center, as in the coin of Caligula next to be described (Pl. II, fig. 2). In this coin of Tiberius one is prone to use the word "huge" in describing them. They are $\frac{1}{4}$ the diameter of the coin in height, forming a very conspicuous feature of the reverse.

CALIGULA, 37-41 A. D.

It so happens that the first two of our series of Imperial bronzes are both in honor of deceased persons. As the coin of Tiberius, just described, was really in honor of Divus Augustus and contained the latter's portrait, not that of the reigning Emperor, so the next coin in chronological order (Pl. I, fig. 2), a middle brass, contains on its obverse the portrait and inscription of Germanicus, though its reverse proves it to have been struck in the reign of Caligula, long after the death of the former. Thus, by an interesting chance, our series denies us portraits of the two tyrants, Tiberius and Caligula, on coins of their own reigns, but has given us instead the images of two of Rome's grandest men, Augustus and Germanicus. This one coin holds the unique distinction in the series, of being the only piece struck in honor of a male relative of the Emperor, though there are several coins in honor of female relatives.

Germanicus, the nephew, adopted son, and heir-apparent of Tiberius, is shown on the obverse in left profile and with bared head. As Baumeister shows, Vol. I, p. 231 of his *Denkmaeler*, where a reproduction of this coin is given, there is marked resemblance between this coin-portrait of Germanicus and his marble statue in the Louvre.

The Inscription on the obverse, as abbreviated, reads as follows: GERMANICVS.CAESAR.TI.AVG.F.DIVI.AVG.NEPOS. Written in full, it would read, Germanicus Caesar, Tiberi Augusti filius, Divi Augusti nepos, "Germanicus Caesar, son of Tiberius Caesar, grandson of the Deified Augustus."

Nero Claudius Drusus, brother of the Emperor Tiberius, had been named Germanicus by decree of the Senate, in honor of his military successes against the Germans, and his descendants were accorded the privilege of inheriting the same as a family name. The prince in whose honor this coin was struck was the elder son of this Drusus, appropriating Germanicus as a praenomen or first name. Happily the name was his, not only by right of succession, but in just reward for his victories in the same field. We shall find in the next coin (Pl. I, fig. 3) the Emperor Nero employing the same name, for he was great-grandson of the first Germanicus. The name becomes a familiar one in the series, for, although Nero was the last to claim it by inheritance, later Emperors were proud to own the title after exploits, real or delegated, on Germanic soil.

Though our present Germanicus was properly, on his father's side, a descendant of the Claudian-Livian-Drusus families and only a Caesar by descent through four women, his adoption into the Caesar family caused the latter to prevail in the formula of his name. And curiously enough, this name Caesar, so imperishable, devolved upon Germanicus through three several steps in adoption. For, first, Augustus became a Caesar by will of his great-uncle, the Dictator; Augustus in turn adopted Tiberius; and by the same enactment, Tiberius made Germanicus his heir and Caesar—hence he is called “son of Tiberius Augustus” on the coin. After the extinction of even this adopted branch in the death of Nero, the name, as we shall have evidence from our coins, came to be an imperial title and all but necessary to the throne, in much the same way that Ptolemy, after the first monarch of that name, became the legacy of succeeding sovereigns of Egypt, or that of Arsaces was prefixed to the royal line of Parthia.

In styling Germanicus, as here, the son of Tiberius Augustus, it must be noted that Augustus was thus early an established crown-name. “The August One” had now become similar in usage to our own modern formulae, “His Majesty,” or “His Royal Highness.”

Thus far, there is nothing, even in the inscription, to indicate that the Germanicus of the coin was deceased. This is only to be deduced from the reverse, which dates the coin beyond question in the last months of Caligula's reign, at least 21 years after Germanicus' death. While the Senate may have seen in Germanicus a means of flattering the reigning prince, for Caligula was his son, it is yet eloquent tribute to the lasting memory of a man who had been the idol of the army and the people's favorite thus to have his portrait reproduced upon the national currency almost a quarter of a century after his death.

But, while the coin thus does honor to the hero Germanicus, it also speaks, through these nineteen centuries, of the infamy in which Tiberius was held. It will be noted that the inscription of the obverse names Augustus as Divus but Tiberius simply as Tiberius Augustus. Now, as the latter also was dead when this coin was struck, we have here, as in all other contemporaneous monuments, evidence that the title Divus, though granted to Augustus, was yet denied to Tiberius.

Again, as in the coin of Tiberius, we find in this money of Caligula that there is not exact coincidence in the axes of the two faces. Tiberius' coin had to be tilted slightly to the left and now Caligula's coin as much to the right, in order to bring the reverse exactly upright. These facts, together with others to be noted, prove, as already remarked, that the Imperial coinage was yet immature and had not reached that nicety and perfection which were attained under Nero and, still later, under Trajan.

Huge initials S. C occupy the entire center of the reverse (Pl. II, fig. 2) where later some allegorical figure or historical group is almost invariably to be found. The largeness and prominence of the S. C are a distinguishing feature of these earlier bronzes, a feature that would quickly identify an otherwise doubtful coin. The privilege of coining the baser metals was a prerogative in which the Senate seemed to revel, as a child

in a toy. The coins of later reigns find the S. C more in the nature of addenda, suggestive of the diminuendo in power through which the Senate was doomed to pass.

The mode of inscribing the legend in the margin of this reverse differs from that which finally became stereotyped. Instead of beginning at the left below the center and continuing to the right around the rim until meeting with the first letters at the bottom, in this instance the inscription begins a little to the left of the top. Again, as a rule, the device of the reverse, as is also the case with the portrait on the obverse, necessitates an open space below, occupied later by the S. C, so that ordinarily the gap quite plainly marks the beginning of the inscription on the left as well as its ending on the right. In Caligula's coin, however, the inscription makes a complete circle around the rim, a peculiarity frequently found on coins of the Claudian family. Other coins of these earlier Emperors have the inscriptions reading in quite the contrary direction, *i. e.*, from right to left. These peculiarities are added proofs that the coinage of this period was in a transitional stage. More uniformity in style was developed under later Emperors.

The inscription of the reverse reads, with the suppressed portions supplied in parenthesis—a practice to be employed in the discussion of all the succeeding coins: C(aius). CAESAR. DIVI. AVG(vsti). PRON(epos). AVG(vstvs). P(ontifex). M(aximvs). TR(ibvnicia). P(otes-tate). IIII. P(ater). P(atriae), "Gaius Caesar, great-grandson of the Deified Augustus, (himself) Augustus, Chief Pontiff, with Tribunician Power for the Fourth Time, Father of His Country." After our study of the obverse and its Germanicus, it is rather a surprise to find the reverse ascribing the coin to quite another personage. Above all, one is hardly prepared to recognize that personage under so dignified a title—the execrated prince more familiarly known to us by the nickname of Caligula, "Little Boots."

It is a significant fact, as evidenced in the above inscription, that no one title was adequate to convey the full relationship which the person tersely styled in modern phrase a Roman Emperor bore to his subjects. Tsar or Kaiser or Sirdar are sufficient today to represent these several potentates, but it took a combined group to connote the complete office of the Roman Emperor. Each one title presented but one feature of his official composite. Imperator meant the ruler only from the military point of view, or Consul only from the civic, or Pontifex Maximus only from the religious. Caligula is here named under five out of a possible seven, if we may rank Caesar and Augustus as titles, as they certainly appear to us, and if we also note that Imperator and Consul are missing. It was not often that the entire formula was employed on a coin, for the space was not large enough to accommodate it all, unless the Emperor's own cognomina were to be crowded out. A very frequent ruse was literally to "divide the honors" between the two faces of the coin, apportioning some to the obverse and the remainder to the reverse. The types were quite varied. Some Emperors, like Trajan, enjoyed using the complete

list; but, again, there were others, like Antoninus Pius, who preferred a selection of their multifarious titles. There was great room for variety between HADRIANVS. AVGVSTVS and IMP. CAES. NER. TRAIAN. OPTIM. AVG. GER. DAC. PAR. P. M. TR. P. COS. VI. P. P. S. P. Q. R.

Caligula's coin disposes of the several titles in an order which became in time pretty well stereotyped. Caesar and Augustus were still in the nature of inherited family names at this time, but their position in the list of titles is practically that assigned them by later Emperors who had no such claim. Caesar usually precedes the personal names, while Augustus follows these latter, preceding the list of purely titular names. Next after Augustus comes Pontifex Maximus, usually awarded on accession to the throne and designating the Emperor as the highest religious functionary in the state. Then comes the Tribunician Power, which was the euphemistic way of assigning to the most patrician of all patricians the prerogatives that anciently devolved upon the Tribune of the Plebs. It could not be expected of the Emperor that he should become a plebeian in order to be made a Tribune; therefore, to circumvent this defect in the Constitution, he was deliberately "invested with Tribunician Power." It was in many respects one of the most powerful titles held by the throne. For that reason it was uniformly renewed each year thereby offering a means of designating the year of the reign. Thus, Caligula's coin dates from the year of his Fourth Tribuneship. The placement of the titles that are missing in Caligula's formula, we shall note as they occur in the succeeding coins. Whatever the number of honors and howsoever long, P. P usually closes the list. "The Father of the Country" was a dignified title and rounds off the group most becomingly.

While it was impossible to date our first coin with any more exactness than that it was struck after the death of Augustus and during the reign of Tiberius, *i. e.*, anywhere from 14 to 37 A. D., this second piece affords us an example of how the dating may be determined, often with very close approximation, from the titular formulae. In Caligula's case, the title Pontifex Maximus was conferred at his accession, along with that of Imperator and Augustus, so that a coin of his containing these titles may date from any time in his reign. Turning to the Pater Patriae, we are informed from other sources that this laudatory title was granted Caligula in January of 39, about nine months after his accession. The coin therefore must have been struck subsequent to that date. But there is yet closer determination in the TR.P.IIIII. Caligula was decreed the Tribunician Power at his accession to the Principate, 18 March, 37, and renewed it annually on that same date. His Fourth Tribuneship would therefore begin on 18 March, 40. As he was murdered on 24 January, 41, the coin dates from the last ten months of his reign. Baumeister (*l.c.*) dates it actually within the month of his assassination.

NERO, 54-68 A. D.

The reign of Claudius, Caligula's successor, is unrepresented in the series. The third coin of the Empire belongs to Nero—a very handsome

assarius in beautiful preservation and belonging to a very celebrated group of coins, various types of which may be seen in popular works.

The obverse (Pl. I, fig. 3) presents in quite high relief a finely idealized, laurel-crowned head of Nero in left profile, surrounded by the following inscription in very distinct letters: NERO. CAESAR. AVG(vstvs). GERM-(anicvs). IMP(erator). Other coins of the same group present the right profile and insert other titles in the inscription.

Baumeister, under the article *Augustus*, p. 234, dates this type of coin, known especially by its reverse, from the last years of Nero's reign. It is at least noticeable for the absence of the beard, which characterizes Nero's portraits before his twenty-second birthday, *i. e.*, 59 A. D. The bestial Emperor is certainly a handsome man, to judge from this coin, much more prepossessing indeed than in his two Uffizi Gallery busts or that in the British Museum. His hair is combed in that peculiar fashion of his—in a succession of waves clear across the arch of the forehead from ear to ear, and clustering low down on the back of the neck. These features, so prominent in his portrait-busts, are quite distinct in this coin.

We here for the first time in our collection meet with the laurel-crown. Observe that it was worn, not in a line parallel with the brow, in the mistaken idea we sometimes have of the crown, but inclines at an angle of 45 degrees, so that it rather encircles the back of the head and the ribbon-bow, securing the two ends where they meet, falls gracefully down on the back of the neck. The laurel-crown is certainly much more becoming than the radiate-crown which Nero was the first of living Emperors to assume in his coinage-portraits. . . .

Except in the absence of the beard, the obverse affords no very precise way of dating the coin, for Nero is not here designated by his Tribunicial or Consular offices, as was Caligula in our second coin.

The reverse (Pl. II, fig. 3) is highly prized on account of its contributions to history and archæology, for it supplies evidence not elsewhere to be found. Its device is a representation of the little Arch or Temple of Janus in the Forum, affording a valuable supplement to the meager references to this structure in the Classics. It is therefore interesting to read from our coin that the Janus was not so much a temple as a double archway, in fact merely two side-walls of masonry, with a door at either end. These doors or gateways were taller than the side-walls by more than a third of their height, while gratings occupied the intervening space. Supported on these side gratings and the arches of the two end-gates there was an entablature of two divisions, the ornate design of which may be seen in clearer examples of the coin.

There are two types of the inscription of the reverse. Popular handbooks invariably reproduce the one which reads: PACE. P(opvlo). R(omano). TERRA. MARIQ(ve). PARTA. IANVM. CLVSIT, "Peace for the Roman People having been acquired on land and sea, he closed (the Temple of) Janus." Our coin introduces an interesting variant which seems not yet to have found its way into our *vade mecums*. We have here, substituted for TERRA. MARIQ(ve). "on land and sea," the one word VBIQ(ve), "everywhere." . . .

The occasion of closing Janus's Temple can only be referred to the successful termination of the Parthian War under the direction of Corbulo, Nero's general in the East. A piece of money is thus made to contribute to our fund of historical knowledge, for Tacitus omits mention of this particular closing of the Janus, while, by reason of his omission, doubt had thereby been cast upon the authority of Suetonius (*Nero*, 13), who does assert its closing. Concluding his narrative of the visit of Tiridates, the Parthian King, to Rome in 63 A. D., Suetonius has these words: "As a result of these proceedings, Nero was saluted Imperator, his laurel-crown was deposited in the Capitolium, and he closed the Janus Arch, as if there were no wars now remaining." A difficulty is presented in the counter statement that the presentation of the crown to Tiridates, which Suetonius loosely ascribes to this year 63, did not occur until the year 66. A consequent vagueness is thus imparted to the dating of the closing of Janus. The only safe conclusion is that the coin dates after 66 A. D., when the Parthian War was ended, and before 9 June, 68, when Nero died. Eckhel lists it among the "nummi vagi," *i. e.*, the scattering coins.

The quotation from Suetonius has another connection with our coin, in that it helps us explain the position of the title Imperator in the formula. There can scarcely be any doubt that, where Imperator stands at the beginning of the list, as it does in our next coin, a middle brass of Titus (Pl. I, fig. 4), where it is separated from all the other titles, the rulers who thus placed it, regarded it more in the light of a prænomen, in other words, as a part of their name and not as a title at all. On the other hand, its position at the close of any formula or at least anywhere else than at the beginning, is more consistent with quite another usage—that of the old Republican times, when a general was hailed as Imperator by his troops after a victory. This acclamation on the field was supplanted under the Principate by a decree of the Senate and the title Imperator was affixed to the previous honors in the nature of an addendum. Successive decrees were indicated by numerals attached, as *e. g.*, IMP.III. Nero's placement of this title on the obverse of his coin is in harmony with the historical act commemorated on the reverse, for it was a feature of the same event.

It may be noticed finally that the S. C are divided and flank the Janus on right and left, occupying the same position and having the same proportions which were preserved to the end of the brass coinage, except that they were often placed in the open space below the device.

THE FLAVIAN DYNASTY

TITUS, 78–81 A. D.

Our series omits the three hurried reigns of Galba, Otho, and Vitellius, whose coins are rare by reason of the short periods of their incumbency, and brings us to the Flavian Emperors, failing however to present the founder of the House, Vespasian himself. There are three coins of this era, one of Titus and two of Domitian.

It will be remembered that the three coins of the Julian House, just

described, all bore the Emperor's portrait in left profile. The coin of Titus (Pl. I, fig. 4) next to engage our attention is the first of the series to present a right profile, a practice which happens to be observed until quite near the end of the collection. In actual fact, such was not a fixed rule, for either profile was employed according as the wish of the Senate or Princeps dictated. The right profile seems however to have prevailed, judging from the great preponderance of such pieces in the collection. They present an unbroken line from Titus down to the Constantinian era, when a coin of Licinius again introduces the left profile.

The Flavian's portrait is in high relief—a massive head upon a thick neck, in which may be detected quite a little resemblance to his various busts. He wears the laurel-crown, which, since Nero, had become a means of distinguishing the *as* from the *dupondius*. Titus's resemblance to his father, Vespasian, is very marked in this coin, as is indeed the case with his portrait busts. The coin would in fact be mistaken for one of Vespasian's but for one single letter in the inscription.

Titus inherited the full name of his father, which would lead to confusion were it not that the elder Flavian, following the practice of most of the Emperors; never used his *prænomen*, or first name, in official inscriptions, styling himself simply *Vespasianus*, with the accompanying titles of office and state. His elder son and successor, in order to avoid being mistaken for his father while the latter was still alive, had no other recourse than to designate himself *Titus Vespasianus*. The presence of the abbreviation *T* in inscriptions which are in other respects identical with those of his father, proves them distinctively Titus's own. So we find the inscription of the obverse reading: *IMP(erator). T(itvs). CAES(ar). VESP(asianvs). AVG(vstvs). P(ontifex). M(aximvs). TR(ibunicia). P(otestate). CO(n)S(vl). VIII*, "the Emperor Titus Caesar Vespasian Augustus, Chief Pontiff, with Tribunician Power, Consul for the Eighth Time."

The letter between *IMP* and *CAES* is not clear, but, even were there no distinct traces visible, the space demands a letter. That letter can only be the initial of the name *Titus*, as, from a comparison with other inscriptions of this same period, no other title, either for Vespasian or Titus, is applicable at this point. Such a disposition of the latter's name is however frequently exemplified, while no confirmation can be made for any such formula for the elder Emperor. The letter *T* is therefore our only conclusive evidence for the correct ascription of this coin, for the remainder of the title, even the consular dating and the legend of the reverse, may belong equally well to both father and son. Vespasian died during his Eighth Consulship, while Titus, who had served seven terms as Consul during his father's lifetime, entered upon his eighth little over 5 months after his own accession, first January, 80. He died thirteenth September, 81, without having received an additional Consulship, so that the coin must date from within this period of 1 year and 9 months. The exact Tribunicial year is not designated and a closer approximation is therefore impossible.

The longer official title here given to Titus makes it possible to draw

comparisons between the practice of this Emperor and that of Caligula, as shown by their respective coins, an opportunity which Nero's shorter formula did not offer. The prefixing of *Imperator* as the initial title and the position of the ordinary *prænomen* must first be noticed. The usual family *prænomen*, such as *Titus* here, is not often to be found in the formal inscriptions of the Emperors, for there seemed a tendency to omit or even to suppress it, except when needed for purposes of distinction, as was the case with *Titus*. But where it does occur, it holds the second place in the group, between *IMP* and *CAES*. This interlacing of the two parts of the name, *i. e.*, the *prænomen* and *cognomen*, with *Imperator* and *Caesar* may be added proof that these latter were rather regarded as portions of the inherited or adoptive throne name. It is doubtless an error to call them titles—evidently that is only from our modernized viewpoint.

As for the *cognomen*, *Vespasianus*, we here, in *Titus's* coin, meet for the first time with the tendency to abbreviate even the more essential parts of the family name. *Caesar* and *Augustus* were now as with the value of *prænomena*, which it was the practice to abbreviate at convenience while such *agnomina*, or added names, as *Germanicus* or *Dacicus* (*cf.* *GERM* in *Nero's* coin), were similarly treated. But, to one not accustomed to the whims of epigraphic laws, it seems strange at first to find, as here, *VESP* for *Vespasianus*, and *DOMIT* for *Domitianus* (Pl. I, figs. 5 and 6). The narrowed limits of the coin naturally compelled a process of curtailing wherever possible, and, consequently, the longer the list, the more violent the abbreviations.

The reverse of *Titus's* coin (Pl. II, fig. 4) has for its device a winged *Victory* on the prow of a vessel, yet with the appearance as of flying and striding to the right. Her right foot is resting upon the deck of the ship; her left is lifted on tip-toe, as if a step forward has just been taken. She holds aloft a wreath in her right hand, while a palm branch in the other is resting over her left shoulder. Her garment is closely pressed to her form and streams behind her. The prow of the vessel has a curved end like a swan's neck. The whole device was very probably in imitation of the *Winged Victory* of *Samothrace*, or of the original coins themselves of *Demetrius Poliorcetes*. Such a conception of *Victory*, though oftener without the ship, is a frequent figure in Roman coinage. The *S. C* flank the figure of *Victory*, just above the height of the knees.

The inscription reads *VICTORIA.AVGVST(i)*, "the *Victory* of *Augustus*," or "Augustan *Victory*." It is the first instance in the series of a type of reverse which became quite popular—the coupling of an abstract personification like *SALVS* or *IVSTITIA*, with the Emperor's title in the possessive genitive or as a modifying adjective.

If we would search for a definite event to which to ascribe this *Victory*, reference to the date already deduced from the obverse, *i. e.*, 80 or 81, would suggest some success against the *Parthians* by the Governor of *Syria*, the father of the future Emperor, *Trajan*, and we do know that the latter did win a battle about this time. But the curious fact remains, that all three members of the *Flavian House* employed this very same device on their different coins, but with the inscription *VICTORIA.NAVALIS*, in-



PLATE I
ROMAN COINS, OBTVERSE



PLATE II
ROMAN COINS, REVERSE

dicating the repeated commemoration of some one naval battle. The prow on which Titus's Victoria is made to stand corroborates this interpretation. If so, the event must be looked for in the earlier reign of Vespasian—an event of such moment that it was recalled to the national currency long afterwards. The quest is rather baffling, unless we are to believe that a very minor engagement was quite unduly exaggerated. Stevenson, p. 871 of his Dictionary, suggests "either the great naval loss *by tempest* sustained by the Jews who had fled from Joppa to their ships when the town was attacked by Cestius, or the naval victory gained by the vessels of Vespasian over the barks of the Jews on Lake Gennesareth."

DOMITIAN, 81-96 A. D.

Vespasian's younger son, Domitian, the third and last of the Flavians, is conspicuous in the series with two pieces (Pl. I, figs. 5 and 6). Happily we possess in them the two species of middle brass of the same reign and therefore an excellent opportunity for the comparison of the two coins. The dupondius (fig. 5) is a trifle larger in circumference and considerably thicker than the as (fig. 6). One cannot successfully form any conclusions from the present color of the coins, for, after being exposed to various elements, a coin may have varied tints resulting. As they now appear, the dupondius is much darker and blacker; the as has more of a yellowish tint. According to the style now firmly established in Domitian's time, the dupondius introduces the Emperor to us in corona radiata, the as in the laurel-wreath.

The earlier of the two coins in point of time is the dupondius. Domitian's head is shown on the obverse, right profile, in high relief, the first instance in the series of the use of the corona radiata in the case of a living Emperor, though of course it had been employed ever since the custom had been instituted by Nero. And again it is interesting to note that the corona radiata too rests on the back of the head, at a very acute angle. One feature that catches the eye at once is the Flavian's long, thick neck, which would have been relieved by a greater display of the toga about the shoulders; as it is, only slight traces of it may be seen on the very tips of the relief, although there is a suggestion that in this the Medusa may be intended, which Domitian is known to have worn on his breast as a charm and which is quite distinctly represented in many of his coins.

The first two titles or prænomena of the inscription, IMP(erator). CAES(ar), are not legible, but doubtless to be inferred, according to the usual formula of this period, first witnessed in our series in the coin of Titus and not to be renounced until after many generations of Emperors. The remainder is quite clear: DOMIT(ianvs). AVG(vstvs). GERM(anicvs). CO(n)S(vl). XI. CENS(oris). POT(estate). P(ater). P(atriciae), "the Emperor Caesar Domitian Augustus Germanicus, Consul for the Eleventh Time, with Censor's Power, Father of His Country."

Germanicus had ceased to be a family name with the imperators since the death of Nero. We now find Domitian appropriating the title in the year 84 A. D., by virtue—of what?—a mock triumph, in which slaves

with wigs of flaxen hair and painted faces were hired to impersonate German captives. The hypocrisy and shame of a tyrant are here graven in a single word on a nation's coin. As a laudatory epithet, Germanicus is given a place in the group that is intermediate between the purely family names and the official titles. It therefore stands next to Augustus, which always takes precedence over all others of its class, until displaced by Trajan's Optimus (Pl. I, fig. 12).

The assumption of Censorial Power was peculiar to the Flavian dynasty; neither earlier nor later Emperors seem to have coveted it in any such degree. Domitian gave it an added majesty in attaching the adjective "Perpetuus," "perpetual" or "for life"—a unique and solitary instance, which was variously expressed upon the coins. The abbreviations CENS.POT for "Censoris Potestate," "with the Power of Censor" or for "Censoria Potestate," "with Censorial Power" either of which may be the reading of our coin, was framed after the analogy of the long-established "Tribunicia Potestate." This latter title Domitian seems to have sacrificed in order to give place for his Censorial hobby, for it is omitted from both his coins in this collection. Yet it must be noted that, while he gave CENS. POT preference over TR.P, he could not give it the same rank as the latter would have held in the formula, for the Consular title takes precedence.

If we were without other data to aid us, the title Germanicus at least would determine the coin as struck after January of 84. But with the help of the formulae COS. XI. CENS. POT, the dating may be reduced to very small compass. Domitian became Consul XI, on January 1 of 85, and XII on the following January. But, as he did not assume the title of Censor Perpetuus until September 5 of 85, it leaves little less than four months in which the coin could be so dated.

The legend of the reverse is VIRTVS.AVGVSTI, "the Valor of Augustus." What a paradox!—so contemptible an Emperor parading himself as the Censor of Morals and claiming as his motto "The Valor of Augustus!" Virtus is represented by a military figure, doubtless Domitian himself, partially turned toward the right, with left knee inclined forward, the right arm sustained by a spear, while there rests in the hollow of the left what has been interpreted as the parazonium or short sheathed sword. The Emperor's cloak is hanging over the arm that holds this rather ornamental than serviceable weapon and its folds may be seen trailing low down in the hollow of the bent left knee. Undoubtedly, the boasted conquest of Germany is allegorized in this imposing martial posture of the would-be Caesar.

In the second of Domitian's coins, the as (Pl. I, fig. 6), the Emperor is portrayed on the obverse, right profile and laureated. The inscription more nearly encircles the entire rim than upon any of the series thus far reviewed. The curved line of Domitian's neck and shoulders marks the beginning and end of the inscription and occupies the space of but one letter. The formula reads: IMP(erator). CAES(ar). DOMIT(ianvs). AVG(vstvs). GERM(anicvs). CO(n)S(vl). XIII. CENS(or). PER(petvvs). P(ater). P(atriciae), "The Emperor Caesar Domitian Augustus

Germanicus, Consul for the Thirteenth Time, Censor for Life, Father of the Country.'"

The title is identical with that of the dupondius, just described, with the exception of the Consular year and the different formula employed for the office of Censor. The Numeral XIII defines the coin as having been issued two years subsequent to the date of the dupondius, *i. e.*, between 1 January, 87, and 1 January, 88.

The reverse has the legend FORTVNAE. AVGVSTI, "To the Fortune of Augustus." In the center is Fortune, a favorite figure upon Roman Imperial coins and reproduced several times under various guises in our collections. The goddess is gracefully inclined to the left, a cornucopia held upright in the hollow of her left arm. A defect in the coin renders it impossible to determine what is the object which Fortune is holding in her slightly extended right hand, though, by comparison with many other similar devices, it is very probably the patera or sacrificial saucer. . .

THE ANTONINES

TRAJAN, 98-117 A. D.

There are 8 coins of Trajan alone [in this collection] affording a fairly good opportunity to study the numismatic chronology of one reign. The dating of Trajan's money is assisted, over and above the numbering of his Consulships—he neglected the Tribuneships—by the series of additional titles and agnomina decreed him at intervals by the Senate. Coins on which these successive titles, severally or in groups, do not occur, naturally date from times previous to the assumption of those titles.

As a group, these 8 coins of Trajan are the handsomest in the collection. There is an unmistakable elegance in their workmanship, the pieces are symmetrical, the portraiture is strikingly clear, the lettering is evenly spaced and shapely, and, where the title becomes lengthy and the letters are necessarily smaller, the effect of the compact inscription running all around the rim is very pleasing.

The first three are dupondii, so nearly identical in both obverse and reverse, that they are presumably re-issues of the same coin from slightly altered dies. With but the exception of a different spacing between two letters on the obverse, where the point of the wreath upon the Emperor's head breaks the continuity of the inscription, and a change in the numeral of the reverse by the addition of a single stroke, the three so closely resemble, that it was deemed sufficient to select one (Pl. I, fig. 7) to illustrate the group.

The obverse in all three contains a spirited portrait of Trajan in high relief and with laurel-crown, thus identifying them as dupondii. The face on two is unmistakably the same with which we have become so familiar in the Vatican bust—the hair combed forward over the low brow; the strong, virile features. On the third, the one selected for the cut, the head seems somewhat larger and the face fuller and more rounded. On this last-named coin, the lettering of the inscription is compact and the apex of the crown does not intrude into the circle of the title.

The legend of the obverse reads: IMP(erator). CAES(ar). NERVA. TRAIAN(vs). AVG(vstvs). GERM(anicvs). P(ontifex). M(aximvs), "The Emperor Caesar Nerva Trajan Augustus, Chief Pontiff." With the formulae of Caligula and the Flavians still in mind, the title, that Trajan here affects is strikingly simple. The absence of both the Tribunicial and Consular honors and the Pater Patriae is at once apparent. With only the obverse before us, the suggestion might arise, that, out of all his possible titles, Trajan emphasized the religious, prizing the office of Pontifex Maximus above the civic or secular duties, like another Numa Pompilius—rather a surprising conclusion to reach in the face of what history has to say of Trajan's brilliant military achievements and of how the greater part of his reign was spent in the camp. The illusion is dispelled on turning to the reverse, where we find the missing titles. It is only a proof of the law of variety, for Trajan here relegates a portion of his formal crown-name to the reverse, though others of his coins to be described later restore these same titles to the position on the obverse which we have observed in the foregoing pieces.

Both Nerva and Trajan had been conjointly awarded the agnomen Germanicus between October and December of 97—a name which Trajan maintained to the last. The office of Pontifex Maximus could not be divided at this period in the history of the Empire; therefore the presence of P. M upon these coins indubitably dates them after Trajan's accession as sole Emperor in January of 98. Without the assistance of the more definite dating found in the reverse, the presumption from the obverse is in favor of an early date in Trajan's reign, for the inscription is too brief to belong to his later years, when the accumulation of honorary addenda taxed the mint-master to include them within the circumference of a coin. An especial proof of early coinage, as we shall presently discover, is the absence of the name OPTIMVS from both obverse and reverse.

The reverse of the particular coin selected for the obverse of this group is not a clear specimen. Another has therefore been chosen from the three to represent the reverse (Pl. II, fig. 7). The design recalls the Victory of Titus's coin (Pl. II, fig. 4), but with quite marked differences. On the coins heretofore described, Victory and Valor and Fortune have been designated by name. In this coin of Trajan, Victory is not named but readily to be inferred from her attributes. She is here depicted as moving to the left instead of to the right, as in Titus's coin; her wings are extended upward and above her head, not backward; her left hand simply grasps the drapery by her hip; her right hand is extended forward and somewhat downward, rather than upward, as in the Flavian coin, for the object she holds is a shield, whose cognizance is Rome's monogram, the initial letters S. P. Q. R., the first two over the others, representing "Senatus Populusque Romanus," "the Roman Senate and People."

The inscription of the reverse reads: TR(ibvnicia). POT(estate). CO(n)S(vl). II. P(ater). P(atriae), "With Tribunicial Power, Consul for the Second Time, Father of His Country." These titles are, as it were, carried over from the obverse in continuation of the list which began there.

Trajan seems to have shared the attitude of Domitian in preferring the Consular office to the Tribunicial. On 1 January, 98, Trajan entered upon his Second Consulship, with the elder Emperor Nerva as his colleague, so that, if we were to depend upon this one item alone, the coin could be interpreted as having been struck before the accession of Trajan as sole Princeps, although Nerva died little over three weeks afterwards. But the P. M on the obverse and the title P. P here contained on the reverse, prove the coin as belonging within the first two years of Trajan's sole Principate, for the title Pater Patriae, like that of Pontifex Maximus, as we have seen from the discussion of the obverse, was not given until he had become sole Princeps. In fact the P. P was not assumed until 99. Therefore, as the Third Consulship did not begin until 1 January, 100, the coin falls within the year 99 A. D.

As the last-described group of three were dupondii, it so chanced that a second group of three now follows, composed of assarii, as attested by the presence of the corona radiata. The first of these three (Pl. I, fig. 8) falls within Trajan's Third Consulship, as the reverse discloses, *i. e.*, within the year 100 A. D. The inscription on the obverse reads exactly as in the coin of 99, for no additional titles had as yet been awarded. The only difference is that the Emperor here wears the corona radiata. There is the added feature, not always to be found in the *nummi radiati*, but present in all the three coins of this group—a bow of ribbon attached to the lowest point of the crown at the back of the head, just where the bow would be in the case of the laurel-wreath.

Trajan's profile is the same as in the previous coins, in fact scarcely any alterations are to be noted in the Emperor's features throughout all his eight coins. It was a face which Rome might well be proud to retain unchanged on her currency.

The reverse (Pl. II, fig. 8) introduces an agreeable change into the succession of standing figures. The seated woman, under her various appellations, becomes a very familiar device on the reverses of Roman Imperial coins. Though this reverse is quite obscured, the dim outlines are sufficient to show that this must be a seated Fortuna, facing to the right, for a cornucopia can be made out in an upright position in her left hand.

The inscription reads TR(ibvnicia). POT(estate). CO(n) S(vl). III. P(ater). P(atriciae), as in the group last described, with the exception of the numeral, which, as already shown, designates the year as 100 A. D. . . .

In the fifth of Trajan's coins (Pl. I, fig. 9), also an *as* like the last-mentioned piece, though somewhat smaller and much more symmetrical, some rather interesting changes are encountered in the obverse. This is the first coin in the series in which the folds of the toga are distinctly shown in the Emperor's portrait. It is a graceful addition. . . .

A yet greater change is to be noted in the way the formula is expressed, found in this series only in this and the three coins of Trajan yet to be described. The legends of the obverse have hitherto contained the Emperor's name in the nominative, whereas these of Trajan now introduce the dative case in dedicatory style. The coins are thus designated rather more

literally as having been struck in honor of the Emperor by the Senate, and the Emperor himself as the recipient. Such a system seems to have been employed by Trajan's moneyers after the year 105 A. D. The lengthened inscription owes something to this new form for the dative case necessitates two additional letters.

Thus the inscription reads: IMP(eratori). CAES(ari). NERVAE. TRAIANO. AVG(vsto). GER(manico). DAC(ico). P(ontifici). M(ax-imo). TR(ibvnicia). P(otestate). CO(n) S(vli). V. P(atri). P(atriciae), "To the Emperor Caesar Nerva Trajan Augustus Germanicus Dacicus, Chief Pontiff, with Tribunicial Power, Consul for the Fifth Time, Father of the Country."

Late in 102 A. D., in honor of his splendid successes across the Danube, Trajan had been awarded the well-earned title of Dacicus, thereafter to be included as a part of his actual name, in the same way exactly as the younger Scipio, in the times of the Republic, was familiarly known as Africanus, and Pompeius as Magnus. Trajan's Fifth Consulship began 1 January 103, but his Sixth was not assumed until 1 January 112. Remembering that the dative formula did not come into use on Trajan's coins until after 105, there is still left a period of seven years within which this piece may be dated. No additional titles were decreed during this time, and Trajan persisted in his neglect of the Tribunicial year, so that no closer definition for the date may be secured.

The increase in the length of the inscription necessitates a resort to abridgement wherever possible. This accounts for GER instead of GERM, and TR. P instead of TR. POT, as heretofore expressed.

The figure on the reverse (Pl. II, fig. 9) reminds us of Domitian's second coin (Pl. II, fig. 6), for it is again the standing figure of Fortuna, though with different accompaniments. It is an echo of the reign of Trajan's predecessor, Nerva, who had employed an exactly similar design. We must be reminded that, amid all the fascinating variety in the types of Roman Imperial coins, a variation which contrasts oddly with the conservatism in coinage of our own era, there was yet a very marked substratum of fixedness exhibited now and then. The types employed by former Emperors were very frequently repeated by their successors, either out of admiration for the men themselves or for the particular device on their coins which may have appealed to the individual. The designs of the reverse were often appropriated in entirety, where they were but an allegorical figure without definition of date or occasion, or the same device would be used and merely the inscription altered. This "restoring" a coin, as it was termed, marked some reigns particularly, where it was certainly the deliberate choice. Thus it was that the very first coin in our series, the coin struck by Tiberius in honor of Divus Augustus, with its altar and the legend PROVIDENT. (Pl. II, fig. 1), was restored by Vitellius; and the VICTORIA. AVGVST. of Titus (Pl. II, fig. 4) was the repetition of a device similarly employed by his father, and was in like manner appropriated by Domitian. In the later stages of the Imperial coinage, as for example in the times of the Constantines and the Valentinians, the excessive recourse to "restoration" seems to have been due in great measure to the actual poverty in artistic design.

And so, the description given by Humphreys in his *Coin Collectors' Manual* (Vol. I, p. 331) of a coin of Nerva, exactly answers to this reverse of Trajan's—"a robed female standing, with her right hand on a rudder, and her left supporting a cornucopiæ, emblematic of the goddess Fortuna guiding the helm of the State." The inscription "Fortune of Augustus," which usually accompanies the above device, is only to be inferred in this coin of Trajan. The inscription which here takes its place is one of the greatest tributes the great Emperor could receive: S(enatvs). P(opvlvs). Q(ve). R(omanvs). OPTIMO. PRINCIPI, "The Roman Senate and People, to the Best Prince." This loving and sincere epithet came into use on the reverses of coins of this reign in 105 A. D., contemporary with the employment of the dative formula on the obverse. It was made a regular name by decree of the Senate in 114 A. D., and was thereafter a fixture among Trajan's names on the obverse. The presence of OPTIMVS. PRINCEPS upon the reverse must illustrate a purely voluntary compliment, preceding by almost a decade its introduction as a legalized cognomen. It was a name in which both Trajan and the people seemed to take genuine pleasure.

By reference to Stevenson and Eckhel, we find that the sixth of Trajan's coins (Pls. I and II, figs. 10) is one of the most famous of Roman coins. The inscription of the obverse is identical with that of the last coin and therefore belongs to the same general group, *i. e.*, to the period previous to the admission of the name Optimus among the agnomina of the obverse, though it is to be found on the reverse, after the fashion illustrated in the preceding coin.

The reverse displays the design of what has been popularly interpreted as Trajan's bridge across the Danube, one of his great strategic enterprises in the course of his second Dacian campaign, 105-106 A. D. The reliefs on his column in Rome include the bridge in their fascinating review of moving pictures. Our coin reveals two tall towers or piers with an arched structure between. The perspective is so adjusted that, while we are apparently facing the center of the arch, at a point midway between the two towers, we are yet looking down the line of the arch, for the tower on the right presents its landward or outward face, while it is the waterfront or inward face of the tower on the left, as is shown by the fact that the lines of the arch pass across it. The arch itself is divided into two parallel courses, and these courses into sections by vertical cross-pieces which protrude below the arch. Clearer specimens of our coin show distinctly the groups of statuary on the towers, the gondola-shaped boat with cargo under the arch, and the chain or cable stretched on the water level between the towers.

Some numismatists have suggested that this coin presents, not the bridge across the Danube, but the new harbor at Ancona. The statues surmounting the towers and the chain stretched between are maintained to be more appropriate to a harbor. Eckhel however stoutly contends for the bridge, for the reason that the structure is represented as arched and erect, and not a curve on the horizontal, as a harbor would be.

The inscription, evidently the most popular in usage on Trajan's coins, is again the S. P. Q. R. OPTIMO. PRINCIPI, "The Roman Senate and People, to the Best Prince."

The seventh of Trajan's coins (Pls. I and II, figs. 11) is the first sester-tius or large brass in the series. It is much worn in places but with enough left, of both the inscriptions and the portrait, to identify it without question. The relief on the obverse presents the Emperor with laurel wreath. The profile is much like that of the preceding coins, but the back of the head is rather elongated, such that Trajan has the appearance of wearing a lion's skin, as in representations of Hercules.

This much of the inscription is legible: RVAE. TRAIANO. AVG(vsto). GER(manico). DAC(ico). P(ontifici). M(aximo). Without further evidence at hand, we can only say that the coin falls between the dates 102 A. D., when Trajan received the designation of Dacicus, and 114, when Optimus was also added to his name. This latter would appear before AVG, as we shall see from the coin next to be discussed, so that there can be no question as to its absence from this obverse. As it does, however, appear on the reverse, the money doubtless belongs to the class already exemplified, wherein the official use of OPTIMVS was anticipated in popular usage.

The reverse is too much worn to reveal the design. There are hazy outlines of a standing figure in the center, with suggestions of an oval shield on the left arm, or it may be a cornucopia. The letters INCIP, evidently part of the word PRINCIPI, are quite clear, proving it to belong to the "Best Prince" type.

The eighth and last of our coins of Trajan (Pl. I, fig. 12), in which the corona radiata recalls us to the consideration of a dupondius, marks another step in the evolution of the coinage of this reign and the climax in Trajan's accumulation of titles. The inscription of the obverse reveals an increase by two new names: IMP.CAES.NER.TRAIANO.OPTIMO.AVG.GER.DAC.PARTHICO.P.M.TR.P.—and here the inscription becomes illegible. There remains but COS.VI.P.P. to fill out the complete formula in the style which we have learned to recognize in Trajan's coinage.

Trajan had formally accepted the appellation of Optimus in 114 A. D. and invested it with even greater importance than the name Augustus. The position he gives it in his formula clearly reveals his sentiment towards it. It is the first instance in which Augustus suffers displacement in matters of titular precedence. Further proof of Trajan's preference may be deduced from the fact that Optimus never appears on the coins in abbreviated form, though the final O of the dative case is sometimes dropped, which is not very violent abridgement.

Parthicus was the latest honorary name to be awarded the great soldier. Its place could only be determined by considerations of sequence. It was the culmination of a long succession of military achievements, expressed by an eloquent series, now reading Germanicus Dacicus Parthicus. Trajan's practise was to give the full form to each new name until the awarding of another tended to eclipse the former ones. Thus we find Parthicus given its unabridged form in the dative, while the earlier military titles are abbreviated. Neither Trajan nor the Senate were willing, as yet, when this coin was struck, to suffer the fullness of their satisfaction to be shortened even in name.

Attention may be called in passing to the abbreviation NER for Nerva, the only instance of the kind in our series.

The name Parthicus had been decreed between April and August of 116 A. D. As Trajan died in August of 117, the coin may date from the last year of his reign.

The reverse (Pl. II, fig. 12) represents Trajan as Imperator, standing in animated posture between two trophies. His left leg is planted to the front, his body inclined toward the trophy on his left, which he grasps with that hand. But his head is turned toward the other trophy on the right which he is also seizing with his right hand. The moment caught seems to be that between two victories in rapid succession—he has gained one and, still in action, he lays hold upon another. The late date of the coin makes it probable that two victories in his sweeping Parthian campaigns are here commemorated.

The inscription, usually represented by the initial letters, is here expressed in full, though the coin is broken on the right and the last half of the formula can only be conjectured, though of course with entire certainty. It reads: SENATVS.POPVLSQVE.ROMANVS.

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BOOK REVIEWS

ESSAYS IN PENTATEUCHAL CRITICISM¹

BETWEEN 30 and 40 years ago Prof. Julius Wellhausen promulgated a theory, based on literary analysis, that the Pentateuch is not genuine history, but a composite document patched together from several documents of different ages, in which the chronology is entirely disregarded and the arrangement is according to a supposed theory of development. According to this theory two documents originated with distinct Prophetic schools, designated by the symbols J and E because they used respectively Jehovah and Elohim as the names of the Deity. These documents were written during the early Monarchy, several hundred years after the time of Moses, and were subsequently combined into one narrative by an editor, or "Redactor," as he is called. Later Deuteronomy was written and published as a production of Moses in order to give it more weight. This they designate as D. Later still, indeed not till after the Exile, the Priestly legislation was devised and attributed to the time of Moses. This is designated P. and constitutes a large part of the Pentateuch. On this theory there was no Ark in the time of Moses, and there was no central place for sacrifices until the building of Solomon's temple. In short, the history of Israel was entirely reversed. What is represented as first is put last and the last first.

In order to accomplish this, however, innumerable revisions and emendations have to be supposed until the theory becomes more cumbersome and

¹ *Essays in Pentateuchal Criticism.* By Harold M. Wiener, M. A., LL.B.; pp. xiv, 239; \$1.50 net. Oberlin: Bibliotheca Sacra Co., 1909.

complicated than the Ptolemaic system of astronomy. Nevertheless the theory has become so popular that a large number of Old Testament scholars both in Great Britain and America have adopted it in full or in part, and popular literature is becoming so permeated with it that multitudes are coming to regard Moses and the Patriarchs as mythical or legendary heroes, with but slight basis of personality. So confident have the advocates of this theory become that they freely relegate all who question its truth to the class of "old fogies" and "ignoramuses" whose objections are unworthy of consideration.

But in the author of this very learned, able and convincing book the times of Moses are rejuvenated, the theory of the Wellhausen critics is brought to the test of facts that are beyond controversy and the correctness of the traditional theory established beyond all reasonable doubt. While Mr. Wiener addresses himself primarily to scholars, his masterly presentation of facts and arguments is so clearly and forcibly made that the ordinary reader can get its main points without difficulty. In the first place, he shows by such an array of textual evidence as has never before been attempted, that the use of the names "Jehovah" and "Elohim" in the Pentateuch was so interchanged in the original manuscripts that the present Massoretic text cannot be depended upon, so far as these names are concerned, and hence it follows that the Wellhausen critics have built their house on a foundation of sand. Next he shows that the critics have overlooked a great many scriptural passages in which the antiquity of the Priestly code, the existence of a central place of sacrifice and of the Deuteronomic regulations are clearly recognized. Again, he shows that in their phenomenal ignorance of legal terms and forms the critics have created a large number of discrepancies which do not in reality exist. For example they confound a "sanctuary" with an "altar," they do not know the difference between "seduction" and "rape," nor between a "bond slave" and one who, has pledged his services for a term of years to satisfy a debt.

There is a very illuminating chapter on the transmission of numbers in early Hebrew manuscripts. From this it appears that in transcription it was very easy to multiply the number by ten, because of the similarity of the formula for the tens and the hundreds. One who has not given special attention to this subject will be surprised as well as gratified to see how a few natural clerical errors in the record as it stands in the Massoretic text have doubtless created difficulties which disappear when the probable original text is restored. Repeatedly where the numbers in the present text are divided by ten they come down to proportions which appear reasonable in view of the other conditions implied. When this reduction in numbers, and the climatic conditions of the period shown to have existed at that time by Mr. Ellsworth Huntington in a recent article in the *Records of the Past* (Vol. VIII, pp. 140-144) are taken into account, the wandering of the Children of Israel with sustenance for 40 years in the Wilderness becomes easily credible.

Mr. Weiner, the author of this remarkable treatise is a Jewish barrister in Lincoln's Inn Fields, London. He is a recent graduate of high standing from Cambridge University and the author of the standard work on Biblical Law. He was led to devote his spare time to this discussion by a

challenge which Dean Wace of Canterbury made a few years ago to a leading Jewish Rabbi, asking why the Jews left the defence of their great hero, Moses to Christians? "Why do not you Jews" he asked "come to his rescue?" Mr. Wiener has come to the rescue with a defence that no one can afford to overlook. It is not safe to believe anything the Wellhausen critics say until one has read Mr. Wiener's arraignment of their statements of facts and their futile efforts at reasoning.



THE UNIVERSITIES OF ANCIENT GREECE²

FEELING that Greek educational institutions of the imperial times have not received their due share of consideration, Doctor John W. H. Walden has been moved to prepare a volume on *The Universities of Ancient Greece*. The first chapters are devoted to a consideration of the earlier methods of education, starting with the V Century B. C. when the idea was rather to train, especially in military science, than to educate. During this period education "consisted of two parts—a training for the mind and character . . . and a training for the body . . . *Music* in the broad sense (as being any art presided over by a Muse) comprised reading and writing, counting, singing, and lyre or flute playing." Lyric poetry and later tragedians came into school use.

From this early time the author traces the development of Greek Sophistry, which, although he admits that it was "responsible for much that was pernicious in style and in form of thought," was far from being "the wholly bad thing that it is, probably, with us."

The development of the relation of the state to education is traced. In the V and IV Centuries B. C. the state was indifferent to education, its position being that of "non-interference." Later, however, education was at public expense and the teachers came to be not only a highly respected and favored class but were exempt from taxes and the duties of public life, for in the first centuries after Christ it was considered that all teachers were serving the State and "a double service could not be required of them."

The main part of the book is devoted to the first 5 centuries of the Christian era, and gives the history of the educational institutions which crystallized during the first century, showing their advancement up to the time of Marcus Aurelius and then their decline which was hastened by the establishment of Constantinople as the center of Byzantine culture. This latter affected the smaller Greek schools and universities first and finally even the University at Athens.

Of special interest to most of our readers will be the chapters on the professors, their appointment and pay, what they taught, how they taught it and the school houses they used. Epicurus set the example of appointing his own successor, and thus established a method which continued to a greater or less extent for several centuries. Later, however, it became the

² *The Universities of Ancient Greece*. By John W. H. Walden, Ph.D. Pp. xiv, 367. Price \$1.50 net; postage paid \$1.65. Charles Scribner's Sons, New York.

privilege of the students to change the appointment if the choice of their teacher proved to be unfortunate. Students did not choose studies so much as teachers for the personality of the instructor was the potent factor which determined their choice not only of subjects but also of the universities to attend.

Another interesting feature of the book is the description of the student life from boyhood to the college graduate. This is accomplished by giving the substance of the autobiography of Libanius, a sophist of the IV Century A.D.

In conclusion he says:

“The custom of the present day is rather to decry the ancient sophistical training. Its weaknesses are so apparent, and its insufficiency, as judged by modern standards, is felt to be so great, that it is easy to denounce the whole system as artificial and barren. And yet, perhaps, the better way is to see what there really was in this education and what it professed to be in the world as it was at that time. Artificial and barren, in a certain sense, the education was. By laying too great stress on the form in which a thing was said, we may admit, it led to all manner of excesses and extravagances in the matter of style; and this, too, we cannot deny: it did not contain within itself the possibilities of great speculative or scientific truths. If we look, however, to the grand displays of the sophists themselves, we can say—as has been said by others—that we no longer have the means of judging of these aright. Many things in them are lost to us today, and of others we have but an imperfect understanding and appreciation. The play of accent and rhythm, the delicate adjustment of sound and sense in the selection and arrangement of words, the harmony of form, we try to understand, but do so only imperfectly. The orator, his personality, the rise and fall of his voice, the variety and appropriateness of his gestures—these we can only imagine. Even the bare words which were spoken are in most cases unknown to us.

“Greek sophistry did not profess to teach men scientific knowledge or abstract theories—the performance of that task was left to the specialists and to the various schools of philosophy, as long as these existed—but it did profess to prepare men for the active duties of citizenship—the citizenship of those days—and to provide them with a broad and liberal culture, and this task it performed on the whole satisfactorily and effectively for several hundred years” (p. 345-346).



MIRACLE AND SCIENCE³

WE ARE too apt to forget that jurisprudence is a science. The proof of facts must conform to certain reasonable requirements and when those requirements are met the assent to the facts and the action following it are moral imperatives. The work of Judge Lamb is to be compared with that published many years

³ *Miracle and Science*. By Francis J. Lamb, Attorney and Councillor at Law; 12mo. 350 pp. \$1.50 net. Oberlin: Bibliotheca Sacra Co. 1909.

ago in defense of the Gospels by Judge Greenleaf, the great authority on evidence. One of his most impressive chapters treats of "perpetuating evidence,"—a phrase which contains an argument in itself. Unless we have some way of perpetuating evidence, one generation can learn nothing from its predecessors. But fortunately we can perpetuate evidence and the science of jurisprudence tells us how it is done, and gives us the rules regulating the transmission of documents from one generation to another. If we cannot depend on these rules, and do not recognize their binding character, all human affairs are thrown into confusion. By a clear and powerful array of facts and arguments, the learned author shows that the biblical books are worthy of the confidence and authority that is accorded to "depositions" properly taken from witnesses who are absent from court. The volume will be found of great value in aid of all historical investigations as well as in the particular subject of which it treats.



OUTLINES OF GENERAL HISTORY⁴

IT IS a formidable task to present even the bare outlines of general history from the dawn of history to the end of the Russo-Japanese war within the compass of a book of 500 pages. V. A. Renouf in undertaking this task has met with such success that a second edition of his book has just been published. In his preface he states that "The dominant force in the modern world is that complex historical compound called 'Western Civilization.' The history of that Western Civilization must therefore occupy the greatest part of any modern General History"

"An Elementary History like the present, then, always represents a small selection from an immense range of facts. The reader has a right to ask by what principles the author was guided in making his selection. I tried to do the following: First, to show the continuity of history, or, in other words, to make the reader see that the present has grown out of the past. Secondly, to emphasize those events and institutions a knowledge of which is most useful to persons interested in public reforms in the East. Thirdly, to show the value of high ideals of truth and the advantage of liberal institutions. Under this third heading I confess to a personal bias. I believe, however, that the book is free from religious or racial prejudice."

The value of the book is enhanced by a bibliography, added by the editor, at the end of each chapter, giving references to elementary and popular works as well as to standard authorities. The "Comparative Chronological Table" in the second appendix gives a vivid summary of the course of human history.

⁴ *Outlines of General History*. By V. A. Renouf, B.A., of Pei Yang University, Tientsin, China; Edited by William Starr Myers, Ph.D., Princeton University, pp. xx. 501; maps and illustrations. \$1.30 net. New York: Macmillan Company. 1909.

HOME LETTERS OF GENERAL SHERMAN⁵

MR. HOWE has been very happy in his selection from General Sherman's personal letters for this volume of *Home Letters of General Sherman*. No one can feel that he has allowed the reader to trespass upon the sacred ground of Sherman's personal relations with his wife, and yet enough of the personal element is presented to show the deeply affectionate character of the man. The larger part of the letters are those to his wife, beginning back before their marriage, when Sherman, a boy of 17, was a cadet at West Point.

Aside from the biographical interest of the book, the historic value is great. Sherman wrote freely to his family of the events in which he took so active a part and expressed frankly his opinions of men and of affairs military and political. His motives, often questioned by his fellow officers, he explained fully in these letters which might almost be said to have furnished the safety valve for this great general. His keen insight at times made his comments almost prophecies.

More than half the book deals with Sherman's campaigns during the Civil War, especially at Vicksburg, in Georgia, and in the Carolinas, of which latter his son says: "My father always rated this campaign as his greatest military achievement and believed that it settled the fate of the Confederacy."

THE PANORAMA OF CREATION⁶

David L. Holbrook in a small book on *The Panorama of Creation* presents an interesting statement of his view of the relation between the first chapter of Genesis and geology. He considers this chapter the description of the creation as it would have been seen by an observer who states, not the actual origin of things, but what he saw. The book is interestingly and ingeniously written and will be helpful to those who do not understand the relation of the biblical account to the discoveries of science and those who have to answer the questions of others who doubt the value of the Genesis account.

⁵ *Home Letters of General Sherman*. Edited by M. A. DeWolfe Howe; 8vo, pp. 412; frontispiece. \$2 net. New York: Charles Scribner's Sons. 1909.

⁶ *The Panorama of Creation*. By David L. Holbrook, pp. viii, 87. Map. \$.50 net. Philadelphia: The Sunday School Times Co.

EDITORIAL NOTES

RESTORATION OF PYLON AT KARNAK.—M. Legrain has virtually restored the Great Pylon of Rameses I and Rameses II at Karnak and is now beginning the restoration of the southern part of the Hypostyle Hall.

PROTECTION OF EGYPTIAN TEMPLES.—Fourteen temples between Philæ and Wady Halfa have been protected so that they cannot be harmed by any possible inundation caused by the raising of the dam at Assouan. Philæ and Elephantine are to be further protected.

EXCAVATION OF THE DOLMEN OF BARBEHÈRE.—The Abbé Labrie has excavated the dolmen of Barbehère at Potensac (Medoc) and has forwarded the human remains to the Laboratory of Anthropology at Paris, where they have been examined by M. L. Manouvrier. Nineteen skeletons are represented, 16 adult men, 2 women and 1 infant.

ANCIENT ROMAN CONCRETE.—The Pont du Gard in Southern France, erected in 56 B. C., is a fine example of Roman concrete bridges. The concrete was not composed of crushed stone, but of alternate layers of large and small stones, gravel, etc., and of cementitious materials. Early writers described the method of preparation, "using boards laid on edge and filling the space between with cement and all sorts of small and large stones mingled together."

EXCAVATIONS NEAR THE ARCH OF CONSTANTINE.—It is reported that Commendatore Boni has restored to its original level one of the footpaths beneath the Arch of Constantine by removing the two feet of earth which had accumulated. The whole base thus becomes visible and the polygonal pavement of the road between it and the *Meta Sudans* has been laid bare. He expects to treat the rest of the arch similarly. The subterranean exits of the *Meta Sudans* have been discovered in the course of these excavations.

CAST OF LOWER JAW OF HOMO HEIDELBERGENSIS.—M. Capitan, acting for M. Laloy, has presented to the Paris Anthropological Society a cast of the fossil lower jaw found by Herr Otto Schötensack at Mauer, 6 miles south of Heidelberg and named *Homo heidelbergensis*. "M. Manouvrier held that the discovery represented a more advanced stage of morphological evolution than that of *Pithecanthropus erectus*, and M. de Mortillet that it was more primitive than the mandible of Spy." Dr. Siffre has called attention to its essentially human character.

PRESERVATION OF A SECTION OF ROMAN WALL IN LONDON.—The Society of Antiquaries, London, has succeeded in securing the preservation of a fragment of the Roman wall which formerly surrounded the city. It is situated near Newgate street, close to a new

addition to the general post office. The fragment is that of a curved bastion 50 ft. long, 20 ft. high and 8 ft. wide. It is well-preserved, bound together with the famous Roman mortar. The material is known as "Kentish rag," supported by heavy Roman bricks showing the characteristic layers of red tiles such as may be seen at Burgh Castle. As the top is below the street level, the Society proposes to build around the relic so that it will lie in a cave to be entered by stairs.

RESTORATION OF CLIFF PALACE.—During the summer of 1909, Dr. J. Walter Fewkes continued his work of reconstructing the cliff-ruins in the Mesa Verde National Park. The work was carried on under difficulties, as water was scarce, and had to be brought from some distance. Aside from the ordinary wear and tear of weather, the ruins have suffered from the vandalism of curiosity hunters. One of the finest samples of architecture in the Cliff Palace was on the verge of utter ruin when the work of restoration was begun.

The Cliff Palace is about 300 ft. long. It contains examples of every sort of cave-dweller's architecture—round towers, square towers, underground kivas of two different types and secular rooms of all the types that have been found in any other cliff-ruin. Dr. Fewkes' idea is to restore the ruins to the point at which they had been left by the builders, using only such material as had been in the hands of the original architects.

RECENT DISCOVERIES AT POMPEII.—Recently another extensive villa was uncovered at Pompeii. The middle room is ornamented with frescoes in a fine state of preservation. The drawing and expression show good workmanship. There are as many as 48 figures. One fresco represents a woman dressing her hair. She is attended by a maid and a Cupid. Another panel represents a naked priestess of Bacchus with a violet-colored veil. The figure is depicted with grace and vigor. There is also a clothed priestess of Bacchus. The villa also contains statues and other works of sculpture both Greek and Roman, as well as rich furniture and many vases. There were also found coffers filled with gold and silver money. In the basement were large amphoræ used for storage purposes. In the triclinium tables were prepared for 30 persons. Much silverware was found. Some silver pieces seem to have been taken out previously, for there are traces of clandestine search at some former time.

"MEDICINE WHEEL."—It is reported that in the Big Horn mountains, Wyoming, an altar regarded as sacred by the Indians, has been discovered by two mining prospectors. It is known as the "Medicine Wheel," and is held in utmost awe and veneration by the Indians of the surrounding country. It is a giant stone wheel on the flat top of Medicine Mountain, laid out symmetrically and built of great granite boulders so placed as to form a perfect wheel with spokes 150 ft. long. At the center is a great rocky hub. For years the whites have known that somewhere on Medicine Mountain there was some kind of a sacred monument, but the Indians would not talk about it. The identity of the builders is unknown, even

to the Indians. The Indian tradition is that the gods built it and that it is to remain as a sacred object to the end of the world. To the slopes of Medicine Mountain the Indians went for the charm which was to protect them through life. The mountain is considered by them as the home of the Great Spirit.

PIT DWELLINGS IN HOLDERNESS.—At the November, 1909, meeting of the Anthropological Institute a paper was read on Pit Dwellings at Holderness. Mr. William Morfit of Atwuck, near Hornsea, in Holderness, has for 20 years been studying these dwellings, which are excavated 5 ft. deep in the boulder clay and are covered by an unbroken surface soil to the depth of 18 in. The removal of the black clay which fills the pits discloses the original floor with its hearth and broken pottery, and the remains of feasts in the shape of broken bones and rude flint implements. Thirty of these dwellings have been examined and the pottery restored. Their great antiquity is proved by the fact that a surface soil 18 in. deep formed over them after they had been filled up. Upon this surface late Neolithic implements have been found. Therefore the dwellers must have been earlier than the Bronze Age. The pottery is rude, and without decoration. The bones found include the red deer, horse, Celtic ox, goat and pig. Although the sea is now near by, no fish bones or shells have been found, suggesting that the site, when occupied by the pit dwellers, was far inland.

GERMAN EXCAVATIONS AT TELL HALAF.—Under the supervision of Baron von Oppenheim excavations have been in progress at Tell Halaf in northern Mesopotamia. A building with a cuneiform inscription stating it to be the "Palace of Kapar, son of Hanpan," with a doorway protected by the usual monstrous figures in relief was found. One of these figures appears to be a winged human-headed quadruped with horns; another was probably a griffin. There was also a bearded man in a tight-fitting fringed garment with waist-belt. He has two "large curved horns rising from above the ears, and a high spherical cap with a flat top and a veil falling from the rim while his arms are raised and brandish a mace and a rude club." Another veiled head was discovered, probably a female, possibly representing Istar. Baron von Oppenheim would attribute the male head to the Hittite storm-god, Teshup. The architecture and sculpture are similar in style to those at Boghaz-Keuy, Sinjirli and Saktje-Geuzi. The date is considered to be about 900 B. C., and Kapar is thought to have been an independent sovereign. There are some reasons for supposing that the city in which the buildings stood was the Bet-Halupi on the Chebar taken by Asshur-nazir-pal in his campaign of 884 B. C.

ROMAN VASE CONTAINING COINS AND RING.—By reason of a recent slight change in the course of the Humber, an accumulation of silt at a point on the North Lincolnshire coast was washed away, revealing a well-made vase of Roman gray-ware. The vase rested upon the old bank. In the mud which filled it were 6 silver coins and a silver ring. The

coins are remarkably well-preserved. They have been examined and found to be referable to Valens (A. D. 328-378), Valentinianus (A.D. 321-375), Julianus II (A.D. 331-363), Constantius II (A. D. 317-361) and Gratianus (A.D. 359-383).

The ring is as good as new. It is solid silver and has a solid square bezel upon which is a crude representation of the dove and olive branch, indicating Christian influence. One of 3 similar rings found in 1843 in Wiltshire in a vase with coins has a bird inscribed on it which so much resembles this as to suggest that they were the work of the same man.

The recent find is of value because of the dates given, which will aid in determining the chronology of other objects of a similar character. Probably the vase and its contents were part of a hoard hidden in the V century. The specimens have been placed in the Hull Museum.

HARRISON TRAIL STATE PARK.—Part of Spiegel Grove, near Fremont, Ohio, the estate left by President Rutherford B. Hayes, was, in 1909, presented to the State of Ohio, "for the use and benefit of the Ohio Archæological and Historical Society," as stated in the deed from Colonel Webb C. Hayes, "so long as the premises shall be maintained as a state park, in which the old French and Indian trail along the Sandusky-Scioto water course from Lake Erie to the Ohio River, later known as the Harrison Military Trail of the War of 1812, shall be preserved in its present location and maintained as a drive, in which the trees, shrubs, and flowers now growing in said park shall be preserved and cared for, and together with such other trees, shrubs and flowers as may hereafter be planted in said park, shall be properly marked with the scientific and common names, so as to be instructive and interesting to visitors."

The tract of land, not far from Fremont, Ohio, thus deeded to the state includes about 10 acres, through which half a mile of the Trail winds. Five years after the death of President Hayes, the entire property, with its valuable library and collections, was tendered to the Ohio Archæological Society on condition that the Society raise an endowment sufficient to preserve and care for it properly. The Society was unable to raise the funds, so the matter was dropped. This original purpose seems to be partially revived by Colonel Hayes when he said "that in the event of your Society securing the erection of a suitable fireproof building on said Spiegel Grove property, I will transfer to your Society or the state a suitable site therefor in said Spiegel Grove, together with all papers, books and manuscripts left by my father for permanent preservation in such building." His own collection would be included. He also expressed the desire that the whole of the property, including the house, should eventually be under the care of the Society.

POSSIBLY A PEDESTAL OF A STATUE OF BACHUS.—During 1908 an interesting find of 7 sculptured blocks of stone was made on a farm on the Via Prænestina, just outside of Rome. A member of our Society, Prof. Edward W. Clark, who is now in Rome lecturing on the Antiquities of Rome under the auspices of the Bureau of University Travel,

looked up the matter at our request. After visiting the site on the Via Prænestina, he writes on 28 October, 1909, "The stones had just been taken 3 days before [his visit] to the Museo Nazionale, Rome. I saw the site of the excavation, which was very slight and owing to trouble with the authorities had been filled in again. Next day I went to the museum and found the director. He kindly gave me permission to see them, they are in the store room yet, for they are not yet the property of the museum, but on that account could not give me permission to take a photograph. I saw them, however. They are 7 in number. One piece is lacking as it requires 8 to complete the circle. They are a little over 6 ft. high and perhaps $2\frac{1}{2}$ wide, each curved so that when the 8 are together they will form a circle. The figures are about 5 ft. high, and are about the size of girls say of 18 years, of that height. They are all dancing, standing on tiptoe, and the attitude of the bodies, the position of the limbs, upper and lower, the arrangement of the hair in simple knots, and above all the beautiful flowing draperies make a set of figures very beautiful indeed."

"What the sculptures were for is not yet certain. Possibly they formed a pedestal upon which stood a statue of Bacchus. Some think that there may have been a temple to this god at this point. The farm is not far from the ruins of the villa of Gordianus. Close by is the tower known as the Torre de Schiavi."

PERSIAN PALACE OF UKHEITHAR.—On November 9, 1909, Miss Gertrude S. Bell read a paper before the Hellenic Society (London) on "The Persian Palace of Ukheithar," which she discovered in the Syrian desert. Miss Bell explained that the Sassanian empire was protected on the northwest by a small semi-independent Arab kingdom ruled by princes of the Beni Lakhmid. Little has been known of their palaces beyond mention of them by Arab chroniclers. This fortified palace of Ukheithar is chief among them. Its plan shows such similarities to Sassanian palaces that it was evidently erected by Persian architects. The larger brick vaults are constructed *par tranches* in the manner of the vaults at Ctesiphon; the smaller ones, of stone and concrete, are related to those of Firuzabad and Sarvistan. Arched niches break the monotony of flat wall surfaces; there are some remains of stucco ornament. "Characteristic features in arch, vault and decoration, as well as the square bastioned plan, connect the architecture of Ukheithar not only with Persian and Parthian art, but also through these with the earlier arts of Mesopotamia." There is here but one dome and its complete absence in Parthian buildings points to the conclusion that it is a late feature in Mesopotamian architecture. "The dome of Ukheithar is set on corbels, but the 'squinch' arch is found over the angles at the corners of the vaults. The ground vault is frequent, and, as it is unknown in buildings of the Sassanian period, it seems probable that the palace should be dated early in the Mohammedan period, when some Hellenistic influence from Syria might be expected. This does not prevent it from being one of the finest known examples of Persian architecture; it is evident that the Umayyad Khalifs must have employed Persian builders to erect their hunting palaces on the east side of the Syrian desert, just as they used Syrian builders in the western marches."

A BARROW NEAR DRIFFIELD.—On July 19, 20 and 21, 1909, Mr. J. R. Mortimer opened a barrow 6 miles north of Driffield, Yorkshire. A rectangular area 15 by 11 ft. was first uncovered and surrounded by a trench 6 ft. deep which disclosed the original undisturbed surface level. Quantities of broken bones, principally human, were found in the course of digging the trench. Mr. Mortimer considers them relics of the funeral feast, thrown in during the construction of the barrow. "Occasionally these bones seem to have been baked, suggesting cannibalism."

In the central area at a depth of one foot a skeleton was found. This seems to have been a "secondary burial." and was probably originally covered much deeper. The bones were fairly well preserved, evidently of a powerfully built man about 60 years of age. "He had been buried on his left side, with the head to the north, and the knees drawn up at right angles to the body. His arms were crossed in front of the chest."

Less than a foot below this was another skeleton also of a male. This man was buried on his right side with his head to the south. Two feet lower yet were the bones of a human leg—possibly also a relic of the funeral feast.

A little to the northwest of these was encountered what was probably the primary interment. The grave was 7 ft. 8 in. by 4 ft. 7 in. at the top, and 6 ft. 8 in. by 3 ft. 6 in. at the bottom and 4 ft. 3 in. deep. The body was thus 10 ft. from the top of the mound. The grave had been excavated in the chalk, and here the principal interment occurred and was much better preserved than the other two. "The skeleton was on its left side, with the legs drawn up as usual, the head pointing to the south-southeast. In this case, also, the bones were remarkably large and massive and the skull was of the long-headed type." There was not a trace of bone, pottery, or other foreign matter in the grave. "From experience gained in opening other barrows, however, it was clear that the primary burial was that of a Bronze Age British chief, and that within the mound, as secondary burials, were two skeletons of men of similarly powerful stature. Whether these were slain and buried as offerings to the gods or whether they were ordinary burials in a previously existing barrow, will never be known."

"THE MOST ANCIENT OF HUMAN SKELETONS"—In September, 1909, Dr. Capitan and M. Peyrony exhumed a nearly complete human skeleton of the Mousterian age at Ferrassie, in the department of Dordogne, France. The strata covering it were intact. The work of excavation was done with extreme care so that it was possible to photograph the remains before they were disturbed.

"The Ferrassie skeleton was discovered in the course of exploring a mass of débris about 100 ft. long, sloping upward from the road to a low chalk cliff rising a few yards above it. The width of the mass varied from 30 to 60 ft. and its height, at the cliff, from 15 to 30 ft. The appearance of the superficial layer and the fissures of the cliff indicated the fall of an overhanging cliff, which should have formed an extensive shelter at a much earlier epoch. As this view was confirmed by the discovery of chipped flints

where the edge of the mass was cut by the road, explorations were undertaken several years ago, but nothing of especial importance was unearthed until recently. The excavation was begun by digging a broad trench from the road to the cliff in order to allow the mass to be removed in successive horizontal layers. Last September two bones were seen slightly projecting from the wall of the trench, near the bottom. On removing a little earth the bones were recognized as a human tibia and femur. The earth over the bones was then removed, by horizontal layers, with extreme caution. When the greater part of the mousterian stratum had been removed, three flat stones, about 8 in. square, covering the skull and parts of the arms, were discovered. The reddish brown sand which surrounded the skeleton contained many large splinters of bones of animals which showed marks of hammering. Very slowly and with infinite precaution the skeleton was laid bare without displacing a single bone. It lay on the back, with the trunk turned slightly to the left, and the legs sharply bent back under the thighs, which were half flexed on the pelvis. The knees were turned to the right. The left arm was extended beside the body, with the hand at the hip, while the right arm was bent, and the hand near the shoulder. The head was turned to the left, with the mouth wide open.

“The bones, though broken in places by the great weight of the earth above them, remained firm and in their normal positions. Only the bones of the right hand and foot had been displaced, and in part removed, probably by rodents or small carnivora.

“The skeleton was photographed as it lay and the leg and arm bones were carefully removed. The pelvis was then covered with tinfoil and a large plaster cast was formed around it, so that it could be taken up without injury. The thorax and the skull were treated in the same way. Hence these parts can be mounted without the loss of a single fragment, as the earth in which they lay will surround them, inside the plaster casts, until the casts are opened in the preparing room. This method is commonly employed by palæontologists, but this is its first application to human remains.

“Dr. Capitan believes that the skeleton is that of a corpse regularly prepared for sepulture, which may have been covered with earth, but was not buried in a grave. Protected by the vicinity of the living inhabitants of the shelter, the skeleton escaped the hyenas and was only nibbled by small animals. This unique skeleton, which is at least 20,000 years old, will probably be mounted and exhibited in the Museum of Natural History at Paris.” [*Scientific American*]



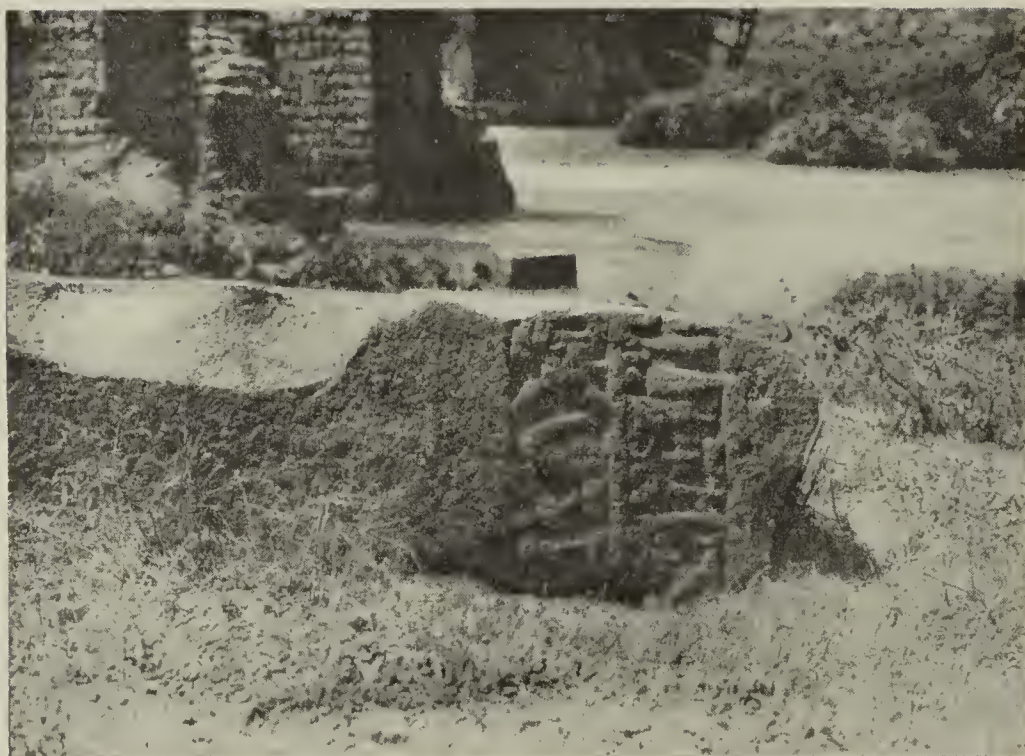


FIG. 1. NEAR VIEW OF HITTITE INSCRIPTION AT RESTAN



FIG. 4. THE TWO PARTS OF THE HITTITE INSCRIPTION AT RESTAN

RECORDS ^{OF} THE PAST

VOL. IX



PART II

BI-MONTHLY

MARCH-APRIL 1910



HITTITE STELE FROM THE ENVIRONS OF RESTAN¹

IN 1902, M. A. Garcia, Engineer, chief of the third section of the line, then under construction, from Rayâk to Hamah, sent me photographs of a monument which he had discovered lying upon the right bank of the Orontes, not far from Restan, the ancient Arethuse. It was easy to recognize here, at a glance, a Hittite monument (Fig. 1). Thanks to the topographical directions which were furnished me by M. Garcia, I found the monument some months later. It is situated about 4 kilometers [$2\frac{1}{2}$ miles] down stream from Restan, not far from a barrage of modern abandoned noria, 1 kilometer [.62 mile] east of the Circassian village of Zahr el 'Asy, which faces it upon the left bank of the river. The right half, longitudinally, of the monument was lacking, but I had the good fortune to take the missing half out of the very bed of the river, where it had served as a barrage.

The stele, of grey local basalt, measures 2 meters in total height [6 ft 6.7 in.] in its present state; the part seen by M. Garcia is 45 centimeters [1 ft. 6 in.] wide and the half found by me is almost the same; the thickness is 28 centimeters [11 in.]. It is complete, except at the top, and naturally, too, but in a very limited degree, along the line of fracture. Various notches, particularly on the reverse of the stele, may be ancient, and indicate, perhaps, that the monument was used in a building; but the matter is very doubtful, for the block certainly does not occupy its original position and appears to

¹ Translated for RECORDS OF THE PAST from *Mélanges de la Faculté Orientale*, University of St. Joseph, Beyrouth, Syria, III, part 2, 1909, by Helen M. Wright.

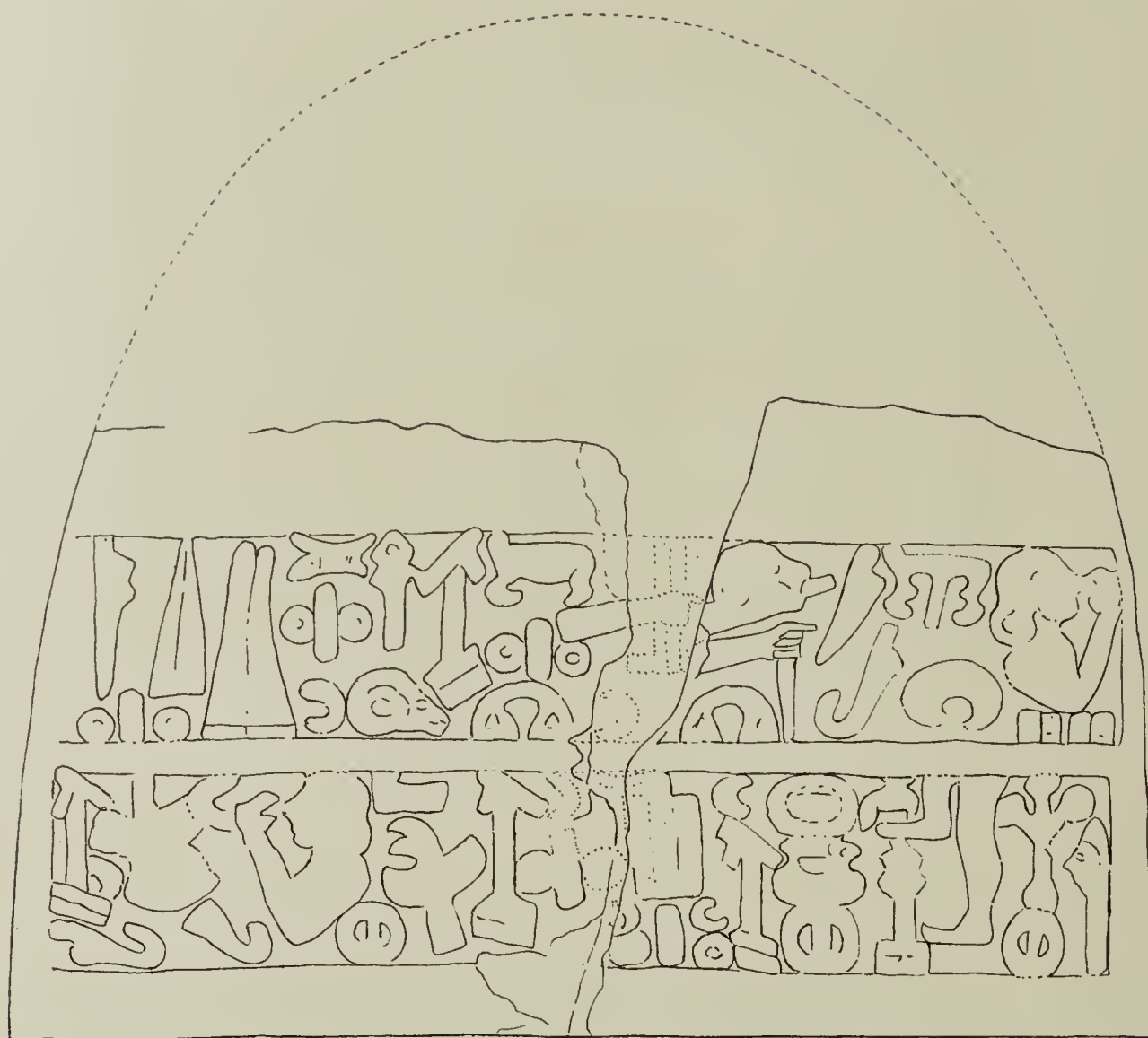


FIG. 3. RESTORATION OF THE HITTITE STELE INSCRIPTION FROM RESTAN

me to have been used elsewhere during the Byzantine period. In fact, not far from the river toward the south, there stands a small tell dating from that epoch and covering, without doubt, relics of the place inhabited or even founded by the Hittites, 15 or 20 centuries earlier.²

As we see, (Figs. 1 and 2) the inscription comprises only two lines of characters in relief, separated by a thin moulding. It is of the type of the Hamath inscription, reputed to be the most ancient up to the present time,³ better still, it reproduces a large number of the groups of signs of which the inscriptions of Hamah are composed. It is that which has encouraged me to attempt a restoration (Fig. 3) which I submit to the friendly examination of specialists.

Our stele is, at least with its epigraph, the most southern Hittite stone monument which has been recovered up to date.⁴ I believe it contemporary

² It would be very desirable to undertake methodical explorations at that point; the country is deserted, so they would be very easy to carry on, and not expensive, the tell being very small.

³ Compare in this connection the remarks of Prof. Sayce *à propos* of the inscription of Kara Dagh, *Proceedings of the Society of Biblical Archaeology*, 1909, p. 83 *et seq.*

⁴ I do not know whether it is necessary to take seriously what many have said of the stele of *As-Sâlihiyé* from Damascus, described first by Porter, *Five Years . . .* I, p. 384, then refound by Wilson and carried to London by the Palestine Exploration Fund, cf. *Quarterly Statements*, 1889, pp. 87, 152 and 210. Conder reviewed it in the second edition of his *Syrian Stone-lore*, p. 463.

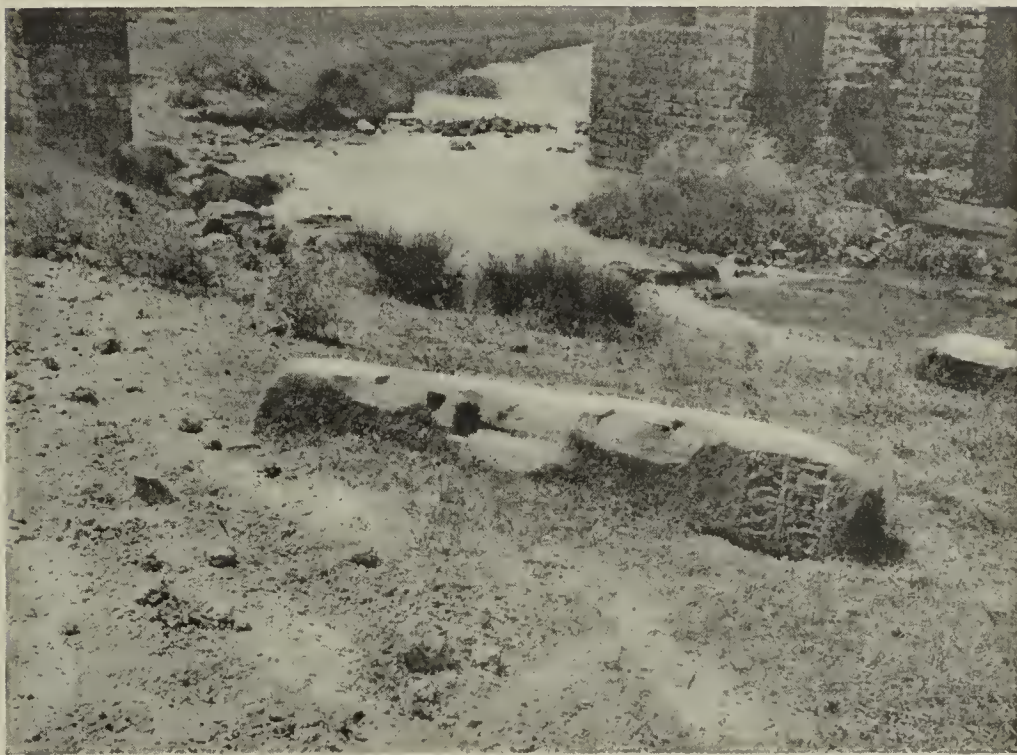


FIG. 2. THE HITTITE STELE AT RESTAN

with the stelæ of Hamah; but not having seen the originals I cannot establish conclusive material comparison. If that conjecture were confirmed, the new monument might become the touchstone for deciphering these texts, still obstinate to all consistent interpretation in spite of the firm confidence of Professor Sayce.

P. S. RONZEVILLE.

Beyrouth, Syria.



HITTITE MONUMENTS OF ARSLÂN-TÉPÉ¹

THE photographs reproduced upon page 71 were sent to me from Malatia in April, 1907, by a correspondent desiring to know what these curious sculptures represented. Their discovery, he told me in his letter, dated back to January 15th of that year and had been made accidentally upon the little hill of Arslân-tépé, at Orda-Sou, a village situated about an hour north of Malatia. Arslân-tépé, you know, has yielded more than one Hittite piece.² These new reliefs are most

¹ Translated for RECORDS OF THE PAST from *Mélanges de la Faculté Orientale*, University of St. Joseph, Beyrouth, Syria, III, part 2, 1909, by Helen M. Wright.

² Messerschmidt, *Corpus inscript. hittitic.*, p. 13; cf. 2nd *Nachtrag* [*MVAG*, 1906, p. 328] p. 7, pl. XLVII, which reproduces the bas-relief in basalt in the Louvre (Heuzey, *Les origines orientales de l' Art*, pl. X). My correspondent recalls having seen, at the age of 14, the bas-relief of similar style, but in limestone, preserved today in Constantinople.

Arslan-tépé (mound or hill of the lion) probably derived its name from a figure of a lion discovered or seen in the ruins; that may be one of the lions of the bas-relief above mentioned, but I would rather believe that the name made allusion to the relief which I shall mention later, in the text and the notes, or to some other sculpture representing some large isolated lion.

interesting, and although the photographs which were communicated to me are defective, it seems advisable to me to publish them without further delay. But I regret that our photogravures are so imperfect. In fact, I am obliged to specify, by short description, certain details which have almost disappeared in these reproductions. I may state, moreover, that the stones have been strongly retouched before being photographed; my correspondent informs me, indeed, that in order to show off the sculptures, they had had the unfortunate idea of smearing with black paint the free surfaces of the tablet.

These photographs were taken in the Serail itself of Malatia, where the monuments had been transported and exhibited while awaiting their departure for Constantinople.³

The 4 monuments are authentic in spite of the doubts which assailed them when I described them for the first time to the Academy of Inscriptions and Belles-Lettres. They are in limestone and of varying dimensions; it goes without saying that they are materially independent among themselves, although they were apparently made part of the same construction, temple or palace. That one which bears the god mounted upon a stag is, in its actual state, 82 centimeters high by 45 centimeters wide and 49 centimeters thick [2 ft. 8 in. by 1 ft. 6 in. by 1 ft. 7 in.]. The same block bears upon one of its edges a figure of a lion, of which my correspondent has sent me a sketch too imperfect to be published.

Each of these reliefs except the last at the right has its counterparts in the known monuments of Hittite art. The two on the left represent religious scenes. The upper tablet presents to us the figure of a beardless god, made small in order to have all entire on the same block, holding in his right hand a bow and in the other the rein of a stag upon which he is mounted. In front of the god is a beardless figure clothed in a long tunic with fringed border, holding in the right hand a lituus⁴ and in the other a vase, the contents of which he pours at the feet of the stag. That figure, apparently a priest, has no head dress; his abundant hair presents the customary large roll. Behind the priest, a small servant, with bare legs and pointed feet, brings to the sacrifice an ibex which he holds by the horns; his hair presents the same characteristic. Above the horns of the stag, are 4 or 5 hieroglyphs, giving, without doubt, the name of the god; the text continues to the right, in two indistinct groups, which represent, perhaps, the name and rank of the priest.

The second scene is the companion of the first; in place of the priest, we have a priestess, whose head is covered with a low head dress, surmounted by a long veil, which hangs down to her feet behind. With her left hand she makes a gesture of invocation, with the other pours a libation in a vase supplied with two handles and a foot and placed on the ground. The divine

³ The American Expedition from Cornell University found them still at Malatia (cf. *Orientalist. Literaturzeit.*, 1908, col. 258 and *American Journal of Archaeology*, 1908, p. 89). According to my correspondent "another stone, very large, has been subsequently transported to the Serail;" it bears a text of which he sent me a copy, too indistinct to be reproduced here. I do not believe it necessary to reproduce further his copy of other texts.

⁴ My correspondent whom I questioned about the unusual termination of the lituus, believes he sees there "a head of a goat, whose eyes only are distinguishable."



FIG. 1. HITTITE RELIEVES FROM ARSLÂN TÉPÉ

figure here appears very complex. It is furnished with wings; it is unquestionable, but it is impossible for me to explain certain of the appendages, which, at least at the right, cannot be symbols of writing. The god seems bearded, but that cannot be determined with any certainty. His left hand, held before him, holds an object entirely indistinct; the other, brought back toward the breast, holds a kind of scepter which, according to my correspondent, would have the form of a caduceus of which we see nothing but the

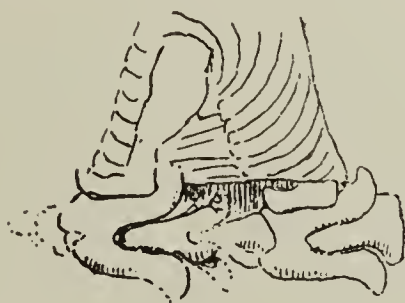


FIG. 2. OUTLINE OF BASE OF THE GOD

end. The most interesting detail, perhaps, is the support of the god. Unfortunately, our plate is very imperfect at this point, and I deem it necessary to give a reproduction in outline (Fig. 2).⁵ What can be the signification of this curious support? All things considered, I believe that it represents lightning, very much conventionalized, and I propose, pending a more extended examination, to identify it with the support still unexplained

⁵ My correspondent, whom I asked to describe the support, saw in it "two birds with tails touching each other."

of the portable *edicule* of the reliefs of Yazilî-Kiaya, an *edicule* which we encounter even in Hittite writing.⁶

The third tablet is very fragmentary; two bearded figures with long rolled tresses, wearing the same costume, one following the other, the first set upon the tops of mountains, represented by little pedestals.⁷ The same figure holds with his right hand a club and with the left a staff bossed at its upper end, perhaps a lance. The second figure appears to pierce with his lance an enemy (man or beast) which touches him above the knee. The club which hangs about his elbow is noticeable.

There remains the last fragment, which constitutes for me a veritable enigma. The scrolls of the border⁸ can be only a variety of the ornament in spiral or in twist, so frequent in Anatolian art; but what is to be thought of the rest of the sculpture? In whatever direction we turn it, we do not arrive at any conclusions as to the significance of the 3 objects which seem confined in the meshes abutting on the border.⁹ It would be more prudent to wait until the monuments are taken to Constantinople where they may be studied at leisure.

Such as they are, these fragments are important for many reasons. If the date can be proved, at least approximately, the much discussed date of the sculptures of Yazilî-Kiaya would be proved, and with it assured chronological data for the history of Hittite art. Besides, the preservation of these reliefs of Arslân-tépé was much better than that of the rock reliefs of Yazilî-Kiaya, many details which are distinguished with difficulty upon the latter, appear here with clearness; that is true especially of the head dress and of the costume of the 4 divinities. No doubt if excavations were made at Arslân-tépé, some results very important to all Hittite antiquities would be forthcoming. It is high time to do this. According to my correspondent, many other sculptures than these which I have just described have been obtained from the ruins and have disappeared before the Turkish government could lay hands on them; with the rest of these stones have been discovered also some metal objects, particularly a silver dish. It is probable that the finds would not be very heavy; the tell is not more than 30 meters [98 ft.] high and the same in circumference, according to appearances, and it probably covers a temple or palace built upon an artificial elevation.¹⁰

For the head dress, compare Perrot, IV, p. 645, where it seems better preserved than anywhere else. The same ornamentation in ringlets is seen, besides, in our reliefs from Arslân-tépé, even upon the clubs. That makes me believe that the supposed "caduceus" of the winged god, the end of

⁶ Cf. in the latter case, Sayce, *Proceedings of the Society of Biblical Archaeology*, 1905, pp. 23, 27. I wonder whether the support of the two metamorphosed bull genii of Yazilî-Kiaya might not be also a conventionalized lightning. Cf. Human and Puchstein, *Reisen in Kleinasien* . . . p. 56 and pl. IX. Upon the various forms of lightning in oriental art, cf. the original and useful work of P. Jacobsthal, *Der Blitz in d. orientalisches u. griech. Kunst*, 1906.

⁷ As at Yazilî-Kiaya.

⁸ The photograph of my correspondent includes only the two rows of the original block; there remains at the right a surface 48 cm. [1 ft. 7 in.] long, where there was no relief. It is, then, clearly a border.

⁹ My correspondent sees here animal figures, "of which only the eyes are distinguishable."

¹⁰ After this article went to press, I read the short notice by Professor Garstang concerning the same monuments in the first part of the *Annals of Archaeology and Anthropology*, Liverpool, pp. 3-4, pl. IV-V. I am very glad that the reproductions of the English savant are better than ours; they will serve in some points as a check on my very long description.

which we do not see, is likewise a club. For the costume of the same god, I have already referred to Perrot, IV, Yazilî-Kiaya, section D. For the others, it is necessary to compare not only the Hittite sculptures, but also the figures from the islands and from Asia which have been preserved for us by the monuments of Egypt. Compare W. M. Müller, *Aisen u. Europa* pp. 337-368. Note an interesting detail; the hooked form of the sword, fixed horizontally at the belt of the two gods one following the other.

P. S. RONZEVILLE.

Beyrouth, Syria.



ANCIENT EGYPTIAN METHODS OF QUARRYING STONE.—

In the *Proceedings of the Society of Biblical Archæology*, for 1909, A. F. R. Platt discusses the methods of quarrying and dressing stone which were used by the ancient Egyptians. From an early date tubular drills tipped with corundum were employed for drilling holes in the rock. Blocks were split off in the quarry probably by the expansion of wooden wedges driven dry into the drill holes and then saturated with water; possibly they also understood the method in modern use, called the feather and block wedge. One inscription states that it took 7 months to quarry two flawless blocks for obelisks. Stone sarcophagi were excavated by drilling holes as mentioned above and then breaking through the spaces between the holes. In later times, saws of bronze or hardened copper with teeth of corundum were used. Granite, bassalt, and diorite vases were chipped and polished on the outside without rotary motion and were hollowed out by grinding with stone blocks fed with sand or emery.

ANOTHER WORD ABOUT THE "BRICKS WITHOUT STRAW."

—Professor Camden M. Cobern of Allegheny College sends us the following communication: "Mr. M. G. Kyle of Philadelphia in the November-December RECORDS OF THE PAST [Vol. VIII, pp. 304-307] speaks of having found in 1908 by personal inspection, carefully conducted, that the bricks of Pithom were in the lower layers made with straw, in the middle layers with stubble and in the upper layers of bricks without straw or stubble. This is interesting to me since in 1889, one year after Naville published his memoir, I visited the site and made this same surprising observation, publishing it later in rather guarded manner in various reviews and then in my book on Ancient Egypt. Naville did not make this statement, and the Bible does not definitely connect Pithom with the city where the straw gave out. My examination was not long continued, but so far as it went this observation—surprising as it seemed—was uniformly confirmed and I brought back samples from the 3 kinds of bricks to an American Museum.

"As showing the accuracy of my earlier hasty observation, Mr. Kyle's seemingly more extended examination is to be welcomed."

WASHINGTON'S CANOE TRIP DOWN THE POTOMAC RELATED IN A LETTER TO COLONEL INNES

THE very interesting paper on *Washington's Canal Around the Great Falls of the Potomac*, in the last number of RECORDS OF THE PAST, suggested the present study of the record of his earliest work for improvement and navigation of this river.

Among the most precious old manuscripts owned by the Minnesota Historical Society is an unpublished long letter of George Washington, which was presented to this Society in 1870 by Hon. Wallace B. White, of Washington D. C., who in 1849-50 had been a resident and territorial officer of Minnesota. The letter, written on a sheet of paper about 8 by 13 in. in size, yellow with age and torn along one of the creases where it was originally folded, is now spread open and framed with glass on each side to allow both sides to be read.

On the side first written, bearing the formal address, the date, 12 August, 1754, and the signature, Washington wrote of the military situation and difficulties to be overcome. Though the name of the person addressed is not contained in the letter, it was evidently Colonel James Innes, in command of the North Carolina troops, as Washington was of those raised by Virginia.

Governor Robert Dinwiddie, of Virginia, had commissioned Colonel Innes, on June 4 of that year, to be commander-in-chief of the forces in a proposed expedition against the French on the Ohio and its tributaries, since all that country west from the Alleghany mountains to the Mississippi and south of the Great Lakes was claimed by the King of Great Britain and his American colonies. A month after the date of his commission, Innes and his North Carolina men had reached Will's creek, on the upper part of the Potomac, where Fort Cumberland was built under his direction, on the site of the city of Cumberland, Maryland.

Washington on his return from the battle of Great Meadows, or Fort Necessity, fought on 3 July, 1754, against the French and Indians on the Youghiogheny river in southwestern Pennsylvania, met Colonel Innes at Will's creek. The present need of transportation of military supplies, and the future needs of commerce between the Atlantic coast and the interior of the country west of the mountains, led both these commanders to wish more detailed knowledge of the navigability of the Potomac river as a part of the most feasible route of communication from the seaboard to the Ohio valley. Therefore Washington and a few chosen men made a canoe journey of observation down this river from Will's creek to its Great Falls, noting its conditions for navigation and especially its principal rapids and falls.

This journey was made probably about the middle of July, in the course of Washington's return to Williamsburg, then the capital of Virginia, to submit to Governor Dinwiddie the report of his eventful western expedition, which had culminated in the battle of July 3. If Washington first completed his return to Williamsburg, traveling wholly by land, and afterward went back to Will's creek for the Potomac canoe trip, it was made in the last week of July or early in August. On the 11th of August, Washington wrote at Alexandria his long letter to William Fairfax, member of the King's Council in Virginia, urging him to dissuade Governor Dinwiddie from his purpose of

sending an expedition for a campaign against the French on the Ohio during the ensuing autumn and winter.

The letter of the next day to Innes was probably also written at Alexandria. On its reverse side, beginning close at the top of the sheet, Washington wrote his description of the Potomac, apparently in much haste, with many interlined additions, shorter insertions by carets, and frequent words crossed out, others being substituted as preferable. The description, with comment on the river navigation, overran that side of the sheet, so that it was finished by interlined writing on the upper part of the opposite side.

The military letter and its postscript are as follows:

12th of August, 1754—

Hon^{ble} Sir

Since writing p^r Express I have considerd and find it better to delay the other to W^{ms}burg till you signifie your Sentiments to me on this head, that I may be guided thereby, and write nothing inconsistent with what you may represent or advise: I should therefore hope you will acquaint me fully with your Opinion of this Affair, and send your dispatches (if any to the Governour) by the return of this Messenger, to take the same conveyance with mine that goes by an Officer who I shall send to receive the needful for Recruiting. If you think it advisable to order me in the shattered Condition we are in to march up to you, I will, if no more than ten Men follows me (which I believe will be the full amount. if it is agreeable to you I should be glad to know what State your Regiment is in as I hear some of your Men are infected with the same disorders that our's are possess'd off—

I am Your most H^{ble} Serv^t

G Washington

I forget to mention in my last y^e great difficulty of getting Waggon, that cannot be removed but by purchasing enough for that use. When we were out I sent express after express, and desired to have the artillery sent and was answer'd that a Waggon cou'd not be hired for 5 times the Value.—

Washington's observations and narration of the canoe trip are as follows. The last part, including "Bridge from whence" and forward, is interlined with the previous military part of the letter.

Sir

Your desire, added to my own curiosity engaged me the last time I was in Frederick to return down by Water to discover the Navigation of Potomack—the following are the observations I mad thereupon, I made in that Trip—From the mouth of Paterson's Creek to the beg^s of Shannondoah Falls there is no other obstacle than the shallowness of the Water to prevent Craft from passing—The first of those Falls is also even and shallow but swift and continues so with interruptions of Rocks to what is known by the Spout w^{ch} is a mile & half—from this [1] their is Rocky swift and very uneven water for near 6 miles, in which distant there are 4 Falls, the first of which is

¹ The head of these rapids and falls, about two miles above the mouth of the Shenandoah river, as the letter shows by the writer's going back and making an interlinear addition of 3 lines, writing thence continuously onward.

tolerably clear of Rocks but shallow yet may be much amended by digging a Channel on y^e Maryland side. ab^t 2 miles from this, and $\frac{1}{2}$ mile below y^e mouth of Shannondoah is what they call the Spout, which is the great (& ind^d almost the only) difficulty of y^e whole it has a considerable Fall y^e water being confined shoots with great Rapidity & what adds much to the difficulty is the bottom being exceeding Rocky occasions a Rippling so prodigious that none but boats or large canoes can pass—The canoe I was in wh^{ch} was not new had near sunk having received much water on both sides and at y^e h^d—Their may be a passage also got round this also upon the Maryland shoar that Vessels may be hald up after removing some Rocks which a moderate expence may accomplish—One of the other two Falls is swift and ugly representing much [2] the Spout but when the River is higher than ordinary a passage may be had round a small Island on the other side—which passage may be greatly improved. ab^t 8 miles below this there is another Fall which is very easy and passable and ab^t 2 Miles from that is a cluster of small Islands with many Rocks and swift water which renders the passage somewhat precarious. From this to the Seneca Fall the Water is as smooth & even as can be desired, with scarcely any perceptable Fall—The Seneca Fall is easily pass'd in two places and canoes may continue within two Miles of the G^t Falls but further it is not possible therefore the *trouble and expence* of advantage of pass^g this Fall will not be adiquite to the expence and trouble will not answer the Charges as all Carriages for the benefits of a good Road are obligd to pass Difficult Bridge from whence it is but 8 Miles to y^e landing place at the Snyerland Island and is 5 Miles to the Lowest landing y^t can be h^d below the afores^d Falls of Seneca. Thus Sir as far as I was capable, have I given you an acc^t of the conveniences and inconveniences that attend the navigation of Potomack fr^m y^e Fall up, which I doubt but you will readily concur with me in judging it more convenient least expensive and I may further say by much the most expeditious way to the country. There is but one objection that can obviate this Carriage & that is y^e scarcity of water in the best season of y^e year for this kind of conveyance.

At the beginning of the Potomac part of the letter, Washington refers to Frederick county, which was established by legislative act of the Colony of Virginia in 1738, comprising the part of its territory west of the Blue Ridge and bounded on the southwest “by a line to be run from the head spring at Hedgman river to the head spring of the river Potomack.” The river first mentioned is one of the upper streams of the Rappahannock. Within the area thus included by the original Frederick county as then existing, bounded on the north by the Potomac river and Maryland, are now 11 counties, and parts of two others, in Virginia and West Virginia.

Patterson's creek joins the Potomac about 7 miles below Will's creek, which was probably the starting point.

The distance traversed along the course of the river in the canoe trip was very nearly 170 miles, terminating at the head of the strong rapids close

² Not much unlike the is written over representing much.

above the Great Falls. In this distance the descent of the river, as noted in the reports on water power published by the Tenth United States Census, amounts to about 460 ft., from about 610 to 150 ft. above the sea.

In $1\frac{1}{2}$ miles next above the mouth of the Shenandoah river, at Harper's Ferry, the Potomac falls about 27 ft.; and its descent in the next 3 miles down stream is 25 ft. Thus the series of rapids and falls most particularly described by Washington, estimated by him to have an extent "near 6 miles," above and below the Shenandoah, comprises a descent of more than 50 ft., being from 272 to 220 ft. above the tide or sea level.

Seven miles below the Seneca Fall, which is at Seneca creek, are the Great Falls, about 14 miles above Georgetown and the head of tidewater, having a sharp descent of 35 or 40 ft. in 100 or 150 yards, and in a mile or a mile and a half a total fall of 80 or 90 ft., from about 140 to 60 or 50 ft. above tide level. The top of the Little Falls, 5 miles above Georgetown, is noted as 37 ft. above tide.

As early as 1749, 5 years before Washington's trip the Ohio Company had taken boats up the Potomac from the head of the Great Falls; and in 1750 they established an Indian trading post at Will's creek, far beyond the boundaries of white settlements. About half a year after Washington's examination of the river, it was again examined by Governor Horatio Sharpe of Maryland and Sir John St. Clair, going in a small boat from Fort Cumberland to Alexandria, their start being on or about 28 January, 1755.

Washington at the time of this journey was 22 years old. Less than a year afterward, on 9 July, 1755, he was in the disastrous battle of Braddock's defeat. Twenty years later was the beginning of the American Revolution.

Much information of the life of Colonel Innes is given by Saunders in his prefatory notes of Volume V, *Colonial Records of North Carolina*. It appears that Innes was born not later than 1700, being a native of Scotland, probably of Cannisbay in Caithness. He came to North Carolina before 1735, and after 1750 he was a member of the Council of that colony. His military service at Fort Cumberland ended in August, 1755, when he returned to North Carolina. He died at Wilmington, N. C., 5 September, 1759.

The survey narrated in this letter was one of the seeds which long afterward fruited in the unremunerative rock-hewn canal and locks constructed past the Great Falls on their Virginia side, and still later in the successful Chesapeake and Ohio canal adjoining the Maryland side of the Potomac. In the national deliberations for constructing the latter canal, Washington's notes of this river survey in 1754 were used, an abstract of them being published, with other data and observations by many later surveys, in a report to Congress (19th Congress, 1st Session, H. R. Report No. 228, p. 26, May 22, 1826). Thus the descriptive letter hurriedly written by Washington, amid many distractions and heavy cares as a young patriot for protection of the colonies against French aggression, has a place in the foundations and beginnings of all the work of this nation for internal improvements and the commercial and industrial development of our country.

If time could turn backward so far, many living in the wider America of today would gladly give much to see the youthful Washington, skilled in frontier and forest surveying, and recently led to take up his great life work as a brave and tactful soldier and a lofty statesman, when on a midsummer day he sped in a canoe, probably a log dugout, down the dangerous rapids and falls of the Potomac near the mouth of the Shenandoah. Some painter and seer should look back to that day and scene and its hero, and should portray them with essential historic truth for the less gifted common people to receive from the picture a lesson of courage and fidelity.

St. Paul, Minn.

WARREN UPHAM.



DISCOVERY OF AN INDIAN SHELL-HEAP ON BOSTON COMMON

ABOUT 1625 William Blaxton (or Blackstone) established himself on the peninsula upon which Boston, Massachusetts, is built, and induced Governor John Winthrop and his company to remove thither in 1630, from Charlestown, "acquainting the Governor of an excellent spring there, withal inviting him and soliciting him thither."¹ Shurtleff says "within the recollection of many of the old residents of the westerly slope of Beacon Hill a large spring poured a bountiful supply of water not far from the centre of the grass plat in the inclosure of Louisburg square. This was unquestionably the identical spring."² One would suppose that, if the Indians ever had occupied the peninsula permanently, traces of their habitation might have been found in that vicinity; but we have no accounts that the first settlers found any there, or in any other part of the peninsula, although they found other springs there.

During the past autumn and winter several trenches have been dug across Boston Common, in which irrigation pipes are to be laid, in the hope of benefiting the trees growing there. In one of these trenches, near the path leading from the foot of Joy street across the Common to West street, on the north side, I recently came upon unmistakable proofs of ancient occupation. The soil was blackened from the decay of animal substances, and mixed with it were broken, black-stained shells of the common soft-shelled clam precisely like what are found to mark the sites of Indian "shell-heaps" along the New England coast. The excavation was not broad, and there were no stone chips, nor implements of stone or bone to be found; but I did find a smooth, thin, flat pebble, marked with deeply incised cuts, such as are frequently found upon Indian sites, and which are supposed to have been used as markers in games. If there ever had been a spring near by, it has long since disappeared; but it would naturally have flowed into "the Frog Pond on the Common. . . . a marshy bog transformed into an artificial pond by the industry and labor of the older townsmen."³

It has seemed to me to be worth while to put upon record this discovery of an Indian shell-heap upon Boston Common.

Boston, Mass.

HENRY W. HAYNES.

¹ Drake's *History and Antiquities of Boston*, p. 96.

² *Topographical and Historical Description of Boston*, p. 391.

³ Shurtleff, p. 411.

THE RELATIONS OF THE GREAT MUSEUMS AND INSTITUTIONS TO THE INDEPENDENT LOCAL INVESTIGATOR

THE desire of our business world to form combines and monopolies has so permeated the atmosphere that even our educational institutions, great museums and learned societies seem to have been infected with the germs. While the advantages of this infection to the purely scientific world have been many, the general public has failed to receive its due portion of these advantages. One class of scientific investigators has been pushed to the wall,—the independent observer who has to do other work for a living. The feeling seems to be prevalent in many of these large institutions that the observations of any one who is not devoting his entire time to scientific research are valueless. And in many cases they consider that the boundary of their own institution marks the limit of all scientific accuracy.

It is for these independent investigators that we wish to make an appeal. We need more of them, and they need the encouragement of the large institutions. Often a local observer on the spot is worth more than a \$3000 scientist afar off, and his observations are at least worth considering.

The writer once went to a small town to call on a man who lived in a very interesting geological locality. His odd time was spent tramping over the neighboring fields. On these expeditions he made discoveries which would have cost an institution thousands of dollars to make, even if they had been fortunate enough to hit on the right place without the aid of some local observer. This man was located with some difficulty. But was finally found. He was setting type on the local town paper, the organ through which his discoveries were first made known. If the great museums and institutions will not look after such men and see that their work is brought to light, who will?

We realize that there are a vast number of "cranks" among those whose avocation is some branch of scientific research, but the large institutions can hardly boast immunity from this malady. It might also be noted that in many cases the so-called cranks of their own generation are looked on as savants by the next, so that it is not advisable to be too hasty in the condemnation of the theories of others, whether they are in your scientific combine or not.

There lies before me a letter from one of the largest and best endowed institutions for the advancement and encouragement of scientific research. This will give a fair idea of the general feeling which exists in these great institutions. It reads as follows:

"Replying to your letter of the 13th inst., in behalf of I beg to state that while I have nothing but commendation for his work, I cannot recommend our Executive Committee to give him a grant.

"Our experience shows that we are certain to waste funds if we attempt to aid any considerable number of investigators who seek to carry on research

as an incident to their vocations. In the great majority of cases of such awards it has been taken for granted that the initial appropriation calls for another, and so on indefinitely. Thus we have been forced to the method of devising our own ways and means, in the main, for carrying on research, having found these to be, in general, far more fruitful than the method of widely scattered grants to individuals whose vocations give them little time for avocations."

The case referred to in this letter was one where \$100 to the local investigator would bring more results than \$5000 to an expedition. To analyse the letter: The ability of the observer is recognized; but they have found such observers to be avaricious and grasping, desiring a second and a third appropriation. Does any such condition ever exist among the scientific members of these large institutions? Would it not be possible to cut off an appropriation after the first season if the results or prospects of results were not commensurate with the expenditure?

Further, their experience seems to have taught them that it is best to keep their appropriations for their own family circle.

Without depreciating the value or denying the necessity of the large expeditions, systematically conducted, we wish to call the attention of the great institutions and their benefactors to the fact that many observations are needed in places which would not warrant great expeditions, but may form connecting links of the highest importance in checking the results and theories of the parties conducting the more extensive excavations. Who can better fill this field than the local investigator? Such persons may also have the advantage of seeing facts with an eye unbiased by a pet theory which has appeared in print and must be substantiated, wittingly or unwittingly, by its author.

These investigators need assistance and encouragement both in conducting their researches and in making the results public. Who will furnish them this aid?

RECORDS OF THE PAST EXPLORATION SOCIETY has not attempted, as yet, any field explorations, but has limited itself to the work of disseminating, in as untechnical a manner as possible, the results of archæological researches carried on by the great institutions, many of which have materially assisted in this matter, and to presenting the results of worthy local observers, and pointing out places where small sums given to aid such investigators would yield rich results. The work of the Society is not intended to be diffusive, nor will it be permitted to encroach upon the operations of others. No exploration is contemplated beyond such as may be deemed necessary to correlate and harmonize, by comparison, the work of other societies, institutions, or individuals in their chosen fields. The idea is to amplify and bring into concrete form the results obtained by contemporary activities, no matter by whom or by what agency the work of exploration has been conducted. None will contend that the work thus contemplated is unnecessary. Indeed, so apparent is its value that only words of warmest appreciation have been expressed by the most partizan workers in each of the various fields of exploration. All recognize that by no other agency could this work of correlation and comparison be conducted so well as by an organization founded like this Society upon a comprehensive and independent basis.

It is only by correlation and comparison that the true values of archæological discoveries are made apparent. It is to the scholarly student and scientific observer that we must look for the truth as deduced from archæological discoveries. These deductions are the basis upon which the publishing feature of this Society is founded, but the work of correlation, unlike that of publication, can not be made self-sustaining and will ever be dependent upon those who appreciate the value and importance of such work. This effort to correlate will disclose from time to time where a small expenditure for original exploration would unify the work already completed in special fields by other agencies and will thus properly come within the scope of this Society. This phase of the work will always be dependent for support on the public-spirited.

There is a world of truth in a remark frequently made and emphasized by the late Professor Lesley, that the advancement of the observational sciences must always depend in the highest degree upon having a multitude of widely scattered observers who can report intelligently upon the details of phenomena occurring about their own doors. It was by encouraging such observers and sifting their reports that Professor Dana accomplished such a monumental work as he did through his publications, chief of which was the *American Journal of Science*, in which were collected and brought to light the unorganized observations of intelligent students all over the world. Notwithstanding all the peculiar advantages secured by government surveys and educational trusts, the importance of the work that may be done by this great army of unorganized observers should not be overlooked. The advantage which many of these observers have from their position in close proximity to the fields of investigation often outweighs all other advantages. It was well said of Sir Humphrey Davey that of all his discoveries that of finding Faraday was the greatest.

Many scientists have made their reputation as such by following their avocation without the aid or encouragement of any institution, until after they became widely known, and literally compelled recognition. The stock of the world's valuable knowledge would be sadly curtailed if it were deprived of the discoveries of Franklin, Morse, Elisha Gray and Edison in electricity; of William Ferrel, the poor school teacher, in meteorology; of John Gulick, the missionary, in biology; of the Wright brothers in the discovery of the principles of aërial flight; of Hall in discovering the processes of manufacturing aluminum; of Agassiz, Andrews, Billings, Deane, Dutton, Engleman, Gould, Hitchcock, Kendall, LeConte, Leidy, Lesley, Hugh Miller, Orton, Mudge, Perry, Prestwitch, Schoolcraft, Spencer, Stone, Taylor, Upham, G. F. Wright and many others in geology; of Hincks, Merrell and Rawlinson in Assyriology; of Dr. C. C. Abott, Miss Babbitt, Nicolai Martianoff, Boucher de Perthes and Dr. Rigillout in archæology, of Le Verrier, William Herschel (a musician) and S. W. Burnham in astronomy. With all of these and many more equally illustrious, their scientific investigations at the outset were their avocations and in many cases remained so throughout life.

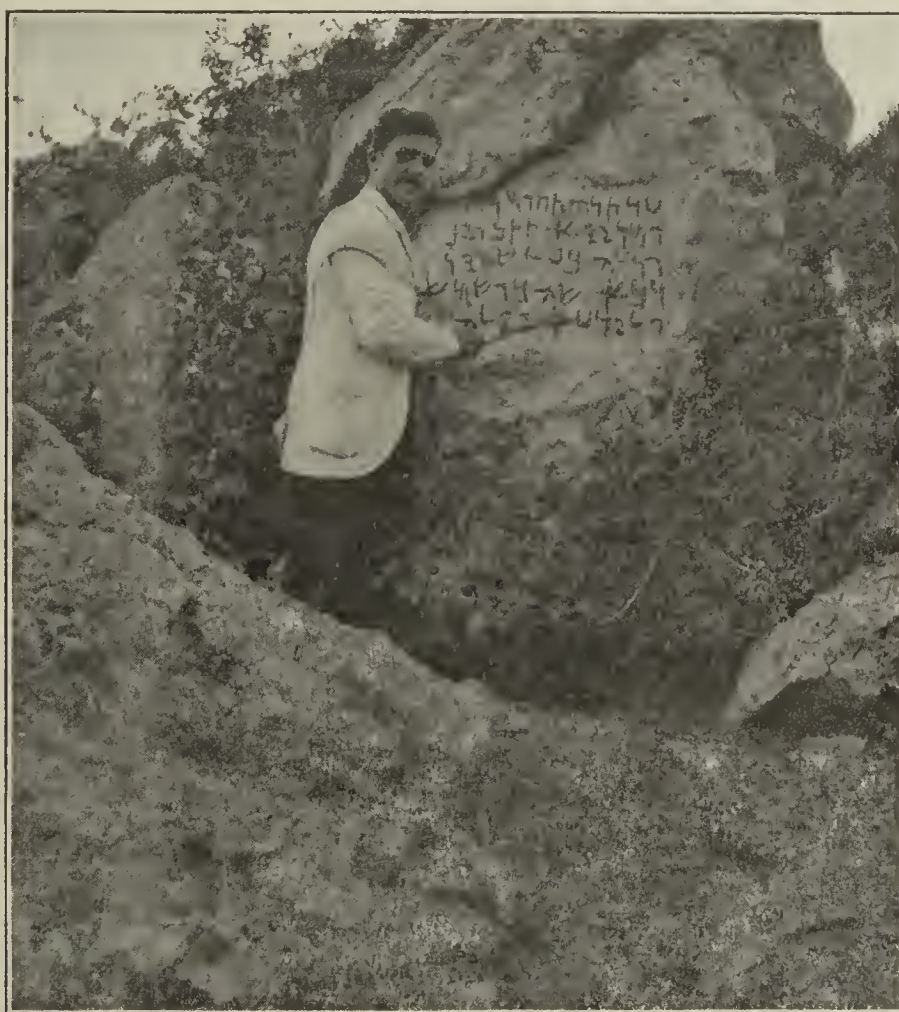
At present we have in mind an archæological society located in the center of the ancient Hittite Country. Here a few hundred dollars could be expended to better advantage and reap greater results than an expedition equipped and sent out from this country at enormous expense. We refer

to the Anatolia Archæological Club of Marsovan, Turkey in Asia. Their most active member, Mr. George E. White, is well known to readers of RECORDS OF THE PAST. Is there not some one who would like to make an investment here, either direct to the Anatolia Archæological Club or through us?

We would also call attention to another local observer who is known to our readers, Professor Isabel F. Dodd, of Constantinople, Turkey. She is interested in an unexplored site at Kul Tepe which promises much of interest and importance.

FREDERICK BENNETT WRIGHT

Washington, D. C.



HITITE INSCRIPTION FROM CILICIA

This is a concrete example of the work of independent observers. The inscription given above is on a rock which seems to have fallen down from the cliffs shutting in the Gözna Valley in the Tarsus Mountains in Cilicia, near Mersine, Asia Minor. For years the presence of the inscription has been known, but until 3 years ago it was considered old Armenian. At that time Mr. Renwick Metheny sent a squeeze of it to the University of Pennsylvania, where it was pronounced Hittite. We are indebted to Miss Mary G Webb of Adana, Turkey in Asia, for the photograph and facts.

BABYLONIAN LEGAL AND BUSINESS DOCUMENTS¹

A VOLUME of *Babylonian Legal and Business Documents* by Arno Poebel, recently published by the University of Pennsylvania, gives numerous sidelights on life in ancient Babylonia. Regarding marriage there is the following contract: “*Enlil-idzu*, priest of *Enlil*, son of *Lugal-azida*, has taken *Amasukkal*, daughter of *NinIB-mansi*, to wife, 19 shekels of silver *Ama-sukkal* has brought in to *Enlil-idzu*, his wife. In future, when *Enlil-idzu* says to *Ama-sukkal*, his wife: ‘My wife not art thou,’ he shall return the 19 shekels of money and in addition pay half a mine as her divorce money. And when *Ama-sukkal* says to *Enlil-idzu*, her husband: ‘My husband not art thou’ she shall forfeit the 19 shekels of money, and, in addition, pay half a mine of silver. In mutual agreement they have both sworn by the name of the king.”

Adoption was a common practice. “The great number of adoptions and the fact that adults, and often more than one, are adopted, show that in Babylonia adoption formed a kind of business transaction by which not only the adopted, but also the adopting person gained an advantage. This consisted primarily in the help which he had from the adopted, and which he needed especially at his age when he could no longer earn his sustenance himself. This becomes very evident from No. 28, which determines the exact amount of the sustenance which the adopted, and the legitimate son have to give to their father and from No. 4 where the adopting priestess secures for herself the benefit of her adopted daughter’s sustenance.”

An ordinary receipt runs as follows: “3 shekels of silver, the purchase money of a house, *Kishli-Nin-IB*, son of *Tabbalatu*, has received from *Balilum* and *Sin-malik*. His heart shall be satisfied.”

“A characteristic feature of the Nippur documents are the seal impressions, which differ in various respects from those on tablets from other parts of Babylonia. . . . The seals employed in Nippur in connection with documents that were sworn to were not those usually borne by the persons who sealed the contract, but were made expressly for the occasion by an official, the *bur-gul*, who is associated in the closest connection with the *dub-sar*, either in the succession *dubsar—burgul* or *burgul—dubsar*, after the names of all other witnesses are recorded. The seals made by the *burgul* were not engraved on such small cylinders of a very hard material as have been found abundantly in the mounds of Babylonian cities, but on small rectangular slabs, or on the rectangular side of more handy pieces of a soft material which could be cut easily. These seals, of course, could not be rolled over the tablet, but were stamped upon them. . . . They never contain pictorial representations. The script of the inscription is larger and less carefully made than on the cylinders. The seal was placed on the tablet in such a way that the inscription traversed the un-inscribed parts of the surface in longitudinal direction. The name of the sealing

¹ Notes and excerpts from Babylonian legal and business documents from the time of the first dynasty of Babylon, chiefly from Nippur taken from Vol. VI, Part 2—*Babylonian Expedition of Univ. of Pa.* By A. Poebel.

OBVERSE OF CASE, REVERSE OF TABLET



OBVERSE OF TABLET, REVERSE OF CASE



CONSENT OF A COMPLAINANT NOT TO FORCE THE WITNESSES OF THE
DEFENDANT TO TAKE AN OATH ON THEIR TESTIMONY, AND RENOUNCE-
MENT TO HIS CLAIMS AFTER RECEIVING $1\frac{1}{2}$ SHEQEL OF SILVER. 19TH
YEAR OF SAMSU-ILUNA

[Courtesy of University of Pennsylvania.]

person is therefore usually reproduced in full. . . . The inscription never contains an addition to the name denoting a religious confession, like 'Servant of this or that divinity,' which is so frequently found on cylinders, but confines itself, on account of its official character, to strictly legal designations, *i. e.*, the *kunya*; and not infrequently the statement of the vocation, which stands before the *kunya*.

"The most remarkable feature, however, is that the names of all the persons forming one party of the treaty, and in connection with division documents the names of all parties concerned, are united on one seal, which would have been an impossibility if the seal had not been made for the one special occasion.

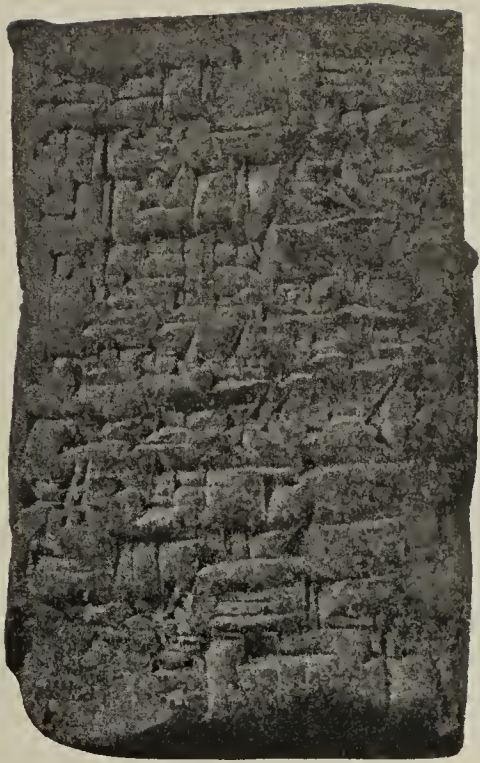
"It is remarkable that such seals were cut by the *burgul* even for the temples, or, using the Babylonian way of expressing it, for the gods, when they were the parties on whom the obligation rested.

"The seals used with contracts that were not sworn to, or such documents as were sealed by the witnesses, were private seals. It is a fact, well known from the Sippar tablets, that only a comparatively small number of persons carried seals containing their own names, but most of them such as either had formerly belonged to other persons, containing the names of these, or had no inscription at all. A considerable number of seal impressions shows only the picture and the name and the titles of a god. The scanty material at our disposal does not permit us to decide with absolute certainty whether this peculiarity explains itself simply by the character of the seal as a charm, of whether they, like the above mentioned *burgul* seal of *Enki* and *Damgalnunna*, are temple seals, and were used by the persons who held office in the respective temples. But the frequent occurrence of one and the same god on different seals leaves but little doubt that the first view is the right one.

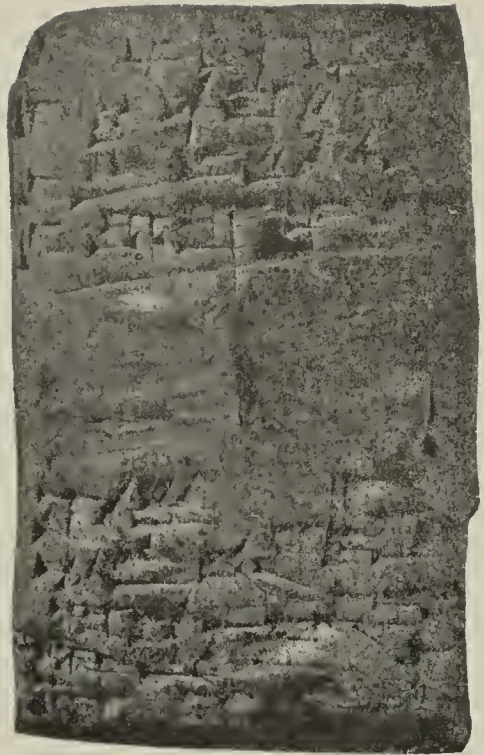
"With some tablets the whole surface is covered with seal impressions the traces of which can be clearly seen between the script. These seal impressions were made before the tablets were inscribed, because the script shows no sign of derangement. This seems to be the case also with those tablets on which the seal impressions are made only on the blank spaces. Contrary to the custom prevailing at Sippar of sealing only the case and leaving the tablet unsealed, in Nippur the inner tablet was sealed also."

In the matter of loans there was some variety. If the loan was in grain or money, it was accompanied by a statement denoting whether the interest was still to be added, or was included in the sum noted in the document. The documents from Sippar always state the rate of interest, while those from Nippur do not; probably because there was but one rate in use, understood in all cases. One document, however, indicates the amount of interest for grain borrowed, as it was to be paid in money. Usually loans of grain or money were paid at harvest time. Bricks, mentioned in one case, were to be returned in the brick-making month.

Years were named after important events, but there is sometimes difficulty in determining whether the event happened in the year named after it, or in the previous year.

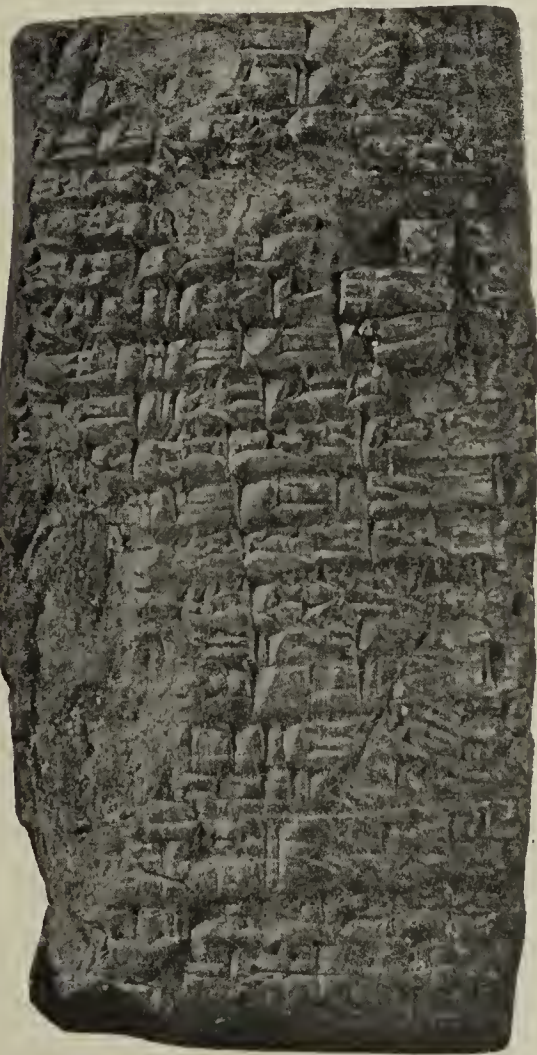


OBVERSE

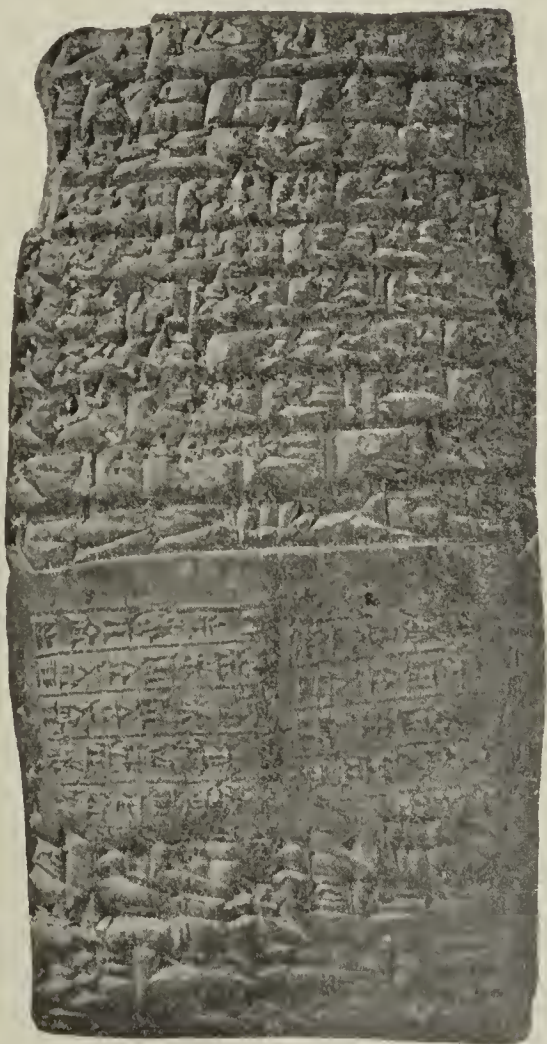


REVERSE

LEASE OF A FIELD FOR PAYMENT OF ONE-THIRD OF THE CROP. 13TH
YEAR OF SAMSU-ILUMA



OBVERSE



REVERSE

DIVISION OF INHERITANCE. THE SEAL CONTAINS THE NAMES OF ALL FOUR
DIVIDING PERSONS. 13TH YEAR OF SAMSU-ILUNA

Courtesy of University of Pennsylvania.

“The events after which the years were named may be classed into two kinds, such as consist of an act that could be performed on one single day, and at any desirable time, as, *e. g.*, the dedication of a votive statue, of a weapon, or of a throne for a god; and, on the other hand, such as either it was beyond one’s power to fix on a certain day or that needed a long time for completion, as, *e. g.*, historical events, the capture of hostile cities and princes, or the digging of canals, the building of city walls and fortresses, of temples and stage-towers. The explanation of date formulas referring to events of the first kind presents no difficulty, *e. g.* . . . ‘The year in which *Ammi-zaduga*, the king, has brought into *E-sagil* great emblems.’ This phrase clearly implies that the act referred to took place within the year in question. Now we know that in later times in Babylon the beginning of the year was celebrated with great religious ceremonies, and that the king himself took a prominent part in them. Therefore, we are hardly wrong in assuming that the king dedicated the statue, throne or the like on New Year’s day, the event being thus within the year to which it gave its name, and, nevertheless, so early that not one day of the year was left unnamed. This assumption becomes very reasonable from the fact that by far the greater number of formulas refer to actions of a religious character. Undoubtedly the royal authorities and the priesthood knew the program of the New Year’s celebration, with the acts planned by the king, a sufficient time before, and could make use of it in the naming of the coming year.

“The difficulties arise with those formulas which refer to events of the second class. . . . There is a possibility, and in some few cases it is even likely, that the formula was promulgated in a later part of the year after the historical event had taken place, but as a general custom this procedure is very improbable, and at least in one case impossible, because the formula which mentions the historical fact is found on a tablet of the first of *Nisan*.

“The solution of the difficulties is that the date formulas mentioning events of the second class are incomplete, and that they recorded in the missing part some religious act, probably the offering of some votive object which alone took place on New Year’s day, and thus in the year of the formula, while the events mentioned before this religious act had occurred in the past, *i. e.*, in the previous year. We should therefore not translate ‘year in which *Hammu-rabi* vanquished *Rim-Sin*’ but ‘year in which *Hammu-rabi*, after having vanquished *Rim-Sin*, brought before *Anum* and *Ellil* some object of the booty or some votive object.’ The correctness of this explanation is proved by the observation that the verbs relating the dedication, etc., of objects on New Year’s day stand in the perfect tense, those relating historical events, however, in the historical tense, which, as I have tried to show . . . denotes the difference of time when it is contrasted with perfect tenses.”



SAN HIPOLITO

THE order, convent, church and hospital of the "Hipólitos" were in the beginning all under one control, but this was changed by the suppression of the order and the closing of the convent, the church and the hospital also becoming independent one from the other. In front of the spot where the church of San Hipólito stands today, there existed in 1520 the second of the two parapets or fortified moats which defended the causeway connecting the ancient Aztec city with the main land. At this point the Spaniards suffered a crushing defeat in their retreat on the "Noche Triste," or sad night. Those who survived, in order to perpetuate the memory of this bloody rout built on this spot a little hermitage which bore the name of "Juan Garrido," as this soldier was mainly instrumental in its erection as soon as the city was finally captured. Shortly afterwards it was called "La Ermita de los Mártires," the Martyrs' Hermitage; finally it was called San Hipólito in commemoration of the 13th of August, 1521, the date of the taking of the city, that day being dedicated to the saint of that name. The church bears that name today.

One Bernardino Álvarez, a native of Utrera, in Andalucía, had accumulated a small capital in various ways in Perú and in New Spain; but becoming weary of his wandering life in 1556 he devoted himself to the care of the sick in the hospital of Nuestra Señora de la Concepción, one of Hernán Cortés' foundations, today known as the hospital of Jesús Nazareno. Ten years passed in this labor at the end of which he decided to found a hospital of his own; he was aided in his efforts by several friends amongst whom were Miguel Dueñas and Isabel de Ojeda his wife, who in 1566 gave him a plot of ground in the Calle de San Bernardo. Finding this too small for his purpose Álvarez asked for and obtained from the city a piece of uncultivated land next to the hermitage of San Hipólito, and was given permission to erect there a hospital which he called San Hipólito also.

With his own money and the alms that he collected he built a few rooms and at once opened them to the sick poor, to the aged and insane, caring for them himself; he then went to Vera Cruz and brought to his hospital the sick who had landed there, and those who were helpless and without destination called "polizones," or those who had left Spain by stealth without leave or a passport from the King or government. Various persons both clerical and secular joined in this work with Álvarez, who then decided to form a congregation or brotherhood to be known as Brothers of Charity; he drew up a constitution which was approved by the bishop of the diocese and, in 1585, by Pope Sixtus V, and then authorized by the Council for the Indies in January, 1589. As the brotherhood was not bound by vows of any description they frequently absented themselves and the work suffered accordingly. To remedy this Pope Clement VIII in October 1604 issued a bull to the effect that the brotherhood should take the two solemn vows of hospitality and obedience, being subject to the rule of the oldest brother.

The brotherhood retained the name of Brothers of Charity until the end of the XVII century, when by bull dated 20th May, 1700, Pope Innocent XII declared it to be a religious order under the Augustine rule, each brother after a novitiate of one year to take the vows of chastity, poverty, obedience and hospitality, being accorded the privileges of the mendicant friars. By bull of 13th December, 1735, these privileges were confirmed and in addition it was provided that the brother in charge should hold office for 6 years only. Such is the origin of the order of hospitaller monks in Mexico.

The original hermitage was built of *adobes*, or sun baked bricks, and the brothers so arranged one of the rooms that it could be used as a chapel; later on the city government offered to erect a better church at its own expense but the work proceeded so slowly that it was not completed until 1739. It was finally put in its present state by the city and opened to the public on 20th January, 1777. Every year a solemn function was held on the 13th of August in commemoration of the capture of the city by the Spaniards; it was partly religious and partly civic, the Viceroy and the nobility always taking part. This occasion was known as "El Paséo del Pendón," the procession of the banner. The pomp of the function diminished with time until in 1812 the Spanish Córtes abolished the processional feature. The day however continued to be observed, the Viceroy and his suite attending services in the church of San Hipólito. Even this was finally discontinued in 1822.

The banner which was carried at the head of this procession was not, as has been generally supposed, the flag borne by Cortés' troops when they captured the City (this is now in the National Museum) but the royal standard specially made for the occasion by order of the City Council. In 1540 a new one was made, the colors being red and green; it combined the best features of the older flag and embodied several new ones among which were the City coat of arms and the motto: "Non in multitudine exersitus consistit victoria, sed in voluntate Dei."¹

A few years after its inauguration this hospital was devoted to the exclusive care of the insane of both sexes, and continued to be so employed until 1908 when the inmates were removed to the church of San Pedro and San Pablo, which has been converted into an asylum.

At the southeast corner of the wall about the courtyard of the church of San Hipólito is a large oval stone on which is carved the following inscription:

Tal fue la mortandad
que en este lugar hicieron los
Aztecos a los Españoles la noche
del 1. de Junio de 1520, llamada por
esto "La Noche Triste," que despues de ha
ber entrado triunfantes á esta Ciudad
los Conquistadores al año siguiente re
solvieron edificar aqui una ermita que lla
maron de los Martires: y la dedicaron a SS
Hipolito por haber ocurrido la toma de la

¹Gonzalez Obregón, *Mex Viejo*, p. 54.



SAN HIPOLITO, MEXICO

Copyrighted Photo by Waite.



SOUTHEAST CORNER OF SAN HIPOLITO. MONUMENT MARKING THE SPOT
WHERE CORTÉS HAD A BATTLE WITH THE AZTECS

Copyrighted Photo by Waite.

Ciudad el 13 de Agosto en que se celebra este Santo.

Aquella Capilla quedo a cargo del Ayuntamiento de Mexico quien acordo hacer en lugar de ella una Iglesia mejor, que es la que hoy existe y fue comenzada en 1599.

TRANSLATION

“So great was the massacre of the Spaniards by the Aztecs in this place on the night of June 1, 1520, called for that reason ‘The Sad Night,’ that after having triumphantly entered this city in the following year the Conquerors resolved to erect here a hermitage which they called ‘The Hermitage of the Martyrs;’ and they dedicated it to San Hipólito, as the capture of the City took place on the 13th of August, the day set apart for the worship of this saint. Said chapel remained in the hands of the City Council which agreed to erect in its place a better church, which is that which today exists and was begun in 1599.”

Below this inscription is carved a large eagle which carries an Indian in his claws; the expression on the Indian’s face seems to denote much pain and horror; he is clad in a feather kilt reaching to the knees and has a *penache* (crown) also of feathers on his head. Below and at each side are seen bows, arrows, quivers, battleaxes, slings and other objects, amongst the latter, near one of the legs of the figure, is a fire brand.

Fr. Diego de Durán in his *Historia de las Indias de Nueva España* gives the following legend which served as the basis for the carving above referred to:

A poor Indian while working in his cornfield one day saw coming toward him from the sky a great eagle, which finally swooped down upon him and fixing its talons in his hair rose with him to such a height that those who witnessed the occurrence lost sight of them.

He was carried a great distance and at length reached a very high mountain where they entered a deep cavern; when they were both within the bird spoke and said,

“Powerful lord, I have complied with thy commands; here is the laborer whom thou badest me bring to thee.”

A voice replied,

“You are welcome; conduct him hither.”

The Indian was then led into a room where all was bright, and there he saw the Emperor Motecuhzoma II sleeping. The Indian was made to sit down and was given a piece of smoldering cane. The voice then said,

“Take the brand; look at yonder miserable Motecuhzoma who is drunk with his own pride and vanity; and if thou wouldest see how insensible he is, touch him on the thigh with the burning cane.”

The trembling man was fearful and dared not do as he was ordered; but

upon being further urged he applied the brand to the Emperor's thigh, and behold, he remained immovable, for he felt it not! The voice then said,

"Seest thou how insensible he is and how drunken? Know, then, that for this thou wast brought here by my command; go, now, return to thy land and recount to Motecuhzoma what thou hast seen and what I bade thee do; and that he may know that thou speakest true, ask him to show thee his thigh and thou wilt find there the mark of the fire with which thou didst burn him. Then say to him that the gods are angry with him; that he himself has sought out all this evil which is about to befall him, and that his power and his pride are coming to an end; tell him too, that he enjoy what little time is still left to him."

The voice ordered the eagle to take the laborer to the place from whence he came; and when they had arrived there the eagle said,

"See to it, O lowly laborer, that thou fear not, but with courage do that which my lord has commanded thee, and forget not the words thou hast to say." Thereupon the eagle disappeared.

The Indian hastened to the Emperor's palace, still holding the burning cane in this hand; kneeling before the monarch he said,

"Most mighty lord, I am a native of Coatepec and while I was at work in my *milpa* an eagle took me to a far off place and in a cavern there I saw thee lying near me. I was given a bit of burning cane and was bidden to touch thee on the thigh with the fire, which I did, but thou didst not move nor didst thou feel the pain. A voice then said that this proved how insensate thou art and how proud, and how thy kingdom is about to come to an end all due to thee along and to thine evil works. I was then ordered to come to thee and tell thee all that I had seen and heard. I have done."

At once the Emperor recalled how the night before he had dreamed that an Indian had burned him on the thigh and lifting his garment there, of a truth, was the burn which began to cause him such pain that he took to his bed; but before doing so he ordered the Indian to be cast into prison there to starve to death; and his orders were carried out.

A. L. VAN ANTWERP.

City of Mexico.



HINDU POLAR MYTH.—A Bengali paper, published in Calcutta remarks that neither Peary nor Cook can claim to be the discoverer of the pole. Hindu myths relate how 4000 years ago the Hindu saint Nurad, at the bidding of Vishnu, conveyed the five-year-old child of Rayah Uttanpat through the air and seated him on his icy throne at the top of the pole where his highness has been seated ever since in the enjoyment of perpetual youth. The Calcutta editor adds: "There the young prince walked on without sledges drawn by dogs or pioneered by Eskimos. He wanted no tinned meats, no sealskin to chew, and no bear's grease to satisfy his hunger, and simply because by the support of the great Vishnu he did not feel its pangs."

DISCOVERIES IN BABYLONIA AND THE NEIGHBORING LANDS¹

GRADUALLY, but surely and ever more speedily, Assyriology is becoming the most important study in the domain of Oriental archæology. The language of the Babylonians and Assyrians proves to be a tongue of the most engrossing importance whilst that of the seemingly earlier race—the Sumerians—with which it was brought into contact, is regarded by some as the coming study for those who wish to acquire renown as true archæological linguists. But besides the languages, with their dialects, a very specially interesting and important field of study is their archæology in general, their beliefs, their manners and customs, their arts and sciences, and the geography of the land. Whether we shall ever obtain information as to their original home, we do not know, but we may, by chance, acquire, ultimately, the information needed to find out where that place may have been; and in any case, we shall know all the better what influence those nations may have had in the world, to say nothing of the bearing of their records on the all-important subject of Bible history, thought, and beliefs. A number of closely-connected nations whose influence extended from Elam on the east to the Mediterranean and Egypt on the west, and from the Caspian Sea on the north to Arabia on the south, cannot fail to have exercised considerable influence beyond those borders and boundaries—an influence of which we shall not obtain a full idea for many years to come.

Now that we have learned so much about these ancient nations, and their peculiar wedge-formed characters, we know also something of their power and the wide influence of their writing. It is now known that the so-called Phœnician goes back to 1500 or 2000 years before Christ, but there was a time when the cuneiform script, in one form or other, was used all over Western Asia within the limits I have indicated. In addition, therefore, to Semitic Babylonia, the cuneiform script, derived from that of Babylonia, was used by the Assyrians, who spoke the same language; the Elamites, who spoke Babylonian and ancient Elamite; the Armenians, who seem to have obtained the syllabary they used from Assyria; the Palestinian states who got their script from Babylonia; the Mitannians, who also employed the Babylonian style; the Cappadocians, who at first used ancient Babylonian, though they seem to have been an Assyrian colony; and the Hittites, who also used the Babylonian style. These are the nationalities who are known to have used some form of the Babylonian wedge-writing, and the list omits ancient Persia on account of the impossibility of tracing any sure connection between their cuneiform alphabet (for that is, perhaps, the best word to use) and the complicated characters of the Babylonians and Assyrians. It will thus be seen, that the cuneiform script, forming, as it does, the medium of communication between so many different peo-

¹ This paper was presented by the author at the 492nd ordinary general meeting of the Victoria Institute, and has been slightly abridged from the Journal of the Transactions of The Victoria Institute, Vol. XLI and illustrations added.

ples of ancient times, is of the utmost importance—indeed, attempts have been made to connect it with the ancient Phœnician, and, through that script, with our writing at the present day. This is not generally accepted, but probably offers, in some cases, comparisons as satisfactory as those obtained with the Egyptian hieroglyphics through the Demotic forms. In addition to the nationalities mentioned above as users of the cuneiform style of writing the inscriptions mention the languages of Su and Suh (the tongue of the Shuhites of Job ii, 11, etc.), the Kassites, and the Lulu-bites.

But the discovery of new languages, or dialects, or new styles of writing, is not yet over, as is shown by the French excavations at Susa. On that interesting site they have found not only a number of Elamite and Babylonian inscriptions in the wedge-formed writing, but also several in a new style, not cuneiform, though the characters may have assumed that peculiarity, under Babylonian influence, about 3000 years before Christ. Among the specimens we have a stone bearing the name of Karibu-sa-Susinak.² The following is the suggested translation of this inscription, by Professor Scheil, the original being, as already indicated, in proto-Elamite:

“Offerings of food, fermented drink . . ., and dates: 20 measures of sweet drink, . . . 2 measures of date-wine, 20 measures of seed-oil, 1 measure of fermented drink, a kind of fish, 1 sixth of a measure of dates (for) food, . . ., 100 measures of sweet food (?), . . . 3 measures of fine *kip*-drink, 100 . . ., 1 sixth of *hal*.”

This inscription, if rightly rendered in the main, reminds one of the numerous tablets recording gifts or contributions of drink, food, and oil, which have been found at Lagas (Tel-loh), in southern Babylonia. The rendering (which I have modified from that of Scheil) is based on a likeness of certain of the characters with the line-forms of the early Babylonian script; but whether we are right in assuming that one is derived from the other or not, I do not know. Though defective, the translation may be regarded as better than none at all. The inscription on the other piece, which has the advantage of being larger and clearer, is very similar to that of which a translation has been attempted, and is probably the same text, with variants.

In addition to these roughly-carved lapidary inscriptions, however, a large number of small clay tablets have been found, apparently forming part of the records of income and outlay of some institution or temple. All these texts are written in narrow columns which, like those of the line-inscriptions, also read downwards, but the style is not linear, but distinctly cuneiform. Prof. Scheil's translation, of one of them which I have somewhat modified, reads as follows:

“Tablet of TU-KAK, 17 DA-NUN-SI, 1 AD- , . . 2 ME, 4 BAD, 1003 and a half DUG (?)-BAD, 9 measures of grain, 9 $\frac{3}{4}$ measures of grain, 2 DUG-GAL.”

² The following is a free rendering of the inscription, which is written in the cuneiform character:—

“Karibu-sa-Susinak, viceroy of Susa, governor of the land of Elam, son of Simbishuk, has dedicated the cedar and bronze gatebar to Susinak his lord. May Susinak, Istar, Narute (and) Nergal, remove the foundation and destroy the seed of any who take this inscription away. The name of the gate is ‘The support of this house’.” According to Scheil, the date of this ruler should be about 2500 B. C.

³ See RECORDS OF THE PAST, Vol. II, pp. 322 et seq.



MAP OF BABYLONIA AND ASSYRIA

The last is probably a kind of large fish.

With reference to the inscriptions of this nature, however, it is needful to say, that one has an uneasy feeling that the characters may not have been pronounced as the Babylonians read them, and that often, when we can translate the words, we do not know their phonetic values, and when we can transcribe them, we do not know their meaning. When this happens, there is no escape from leaving blanks in the renderings, or giving the apparent pronunciations of the somewhat barbarous combinations which the Babylonian syllabaries indicate. With regard to the numerals, their renderings may be looked upon as fairly certain.

But even at Babylon itself at least one linguistic mystery came to light. In 1881 Mr. Rassam found there a contract-tablet referring to the sale, by merchants or tradesmen of that city, of a slave-woman named

Istar-Bâbili-simînni, to a man named Urmanû. This text I published in 1883 on account of the strange characters with which the spaces were filled, hoping that some scholar, more versed in strange writings than I was, might find the key to its interpretation. More than a quarter of a century has passed since that publication, but we are no nearer to the finding of an explanation of these mystic signs. Is it a late form of proto-Elamite? or may it be cursive Hittite? Time alone can show.

Most of the tablets bearing these archaic Elamite accounts are small, and measure only a few inches. One of them, however, is so large that it occupies a whole page (quarto) in the great French publication where they are reproduced. The obverse has only two lines of writing, but bears, in two long rows, the impressions of a cylinder-seal, the design of which is repeated, by continuing the impression, about three times in each row. The subject shows a bull, front-face, horned, standing erect manwise, and holding two sitting lions by the ears. A lion in the same position, but profile instead of front-face, holds, by their humps, two humped bulls, the whole making a somewhat grotesque design. The strange character in the field is probably the Babylonian sign for a vase used for offerings, with additions. As in other cases, these seal-impressions are probably from the engraved cylinder of the scribe who wrote the tablet.

Among the artistic discoveries are some excellent examples, in some cases superior even to the work produced by the Babylonians at the period. The most interesting is probably that representing the Babylonian king Narâm-Sin, ruler of Agadé, marching over the mountains in his victorious course. Naturally, there is doubt whether this is Elamite or Babylonian, but it is to be noted that the style reminds one of the Elamite bronze representing marching warriors, which would seem certainly to have been real Elamite work, and this being the case, it is not unlikely that the relief showing Narâm-Sin is Elamite too. It is known that his father, Sargani, or Sargon of Agadé, conquered Elam, but that the dominion of the country passed to his son is uncertain. Whether this monument may be regarded as evidence in favor of that probability I leave to the judgment of my readers.

Another interesting piece of artistic work is the bas-relief representing a woman spinning. She is seated tailor-wise on a large stool before a table covered with wool, whilst a serving-maid behind keeps off the flies, and fans her mistress with a large fan of square form, which she holds. This is in all probability a representation of a woman of the higher classes, and is interesting as giving a glimpse into the Elamite domestic life. The style is probably late, the figures being more thick-set than in the case of the stele of Narâm-Sin and the bronze relief showing marching soldiers. The thick-set type appears in Babylonia about 1200 B. C. The marching soldiers, however are attributed by Father Scheil to the reign of Sutruk-Nahunta about 1116 B. C., so that it would seem doubtful whether the date can be decided from the type of the figures.

Religious subjects also occur with the proto-Elamite line-inscriptions. This shows the remains of an enormous lion's head, open-jawed, with one forepaw. Kneeling on one knee, and facing the animal, is a deity in a

horned hat, holding with both hands a large cone, apparently brought as an offering. Figures similar to this, cast in bronze, in the round, have been found in Babylonia, and are sometimes called "the god with the fire-stick." They come from Tel-loh, the ancient Lagas, and bear an inscription of the renowned viceroy of that city, Gudea.

It is needless to say, that all these and many other objects of great importance, found at Susa, the ancient capital of Elam, prove the power of that kingdom in ancient times, and show that such a campaign as Chedorlaomer, in the fourteenth chapter of Genesis, is represented as making about 2000 years B. C., is not only possible, but highly probable. With many vicissitudes, she maintained her power until the time of Tepti-Humban, the Teumman of the inscriptions of the Assyrian King Assur-banî-âpli (about 650 B.C.), "the great and noble Asnapper," who intent on absolute supremacy in the East, attacked Elam in three great expeditions, and reduced the country, as he records, to a pitiable state. Having lost her political importance, though not her courage and energy, as still later accounts show, she ceased to attract the historian and traveler, who therefore, to all appearance, passed her over in favor of Nineveh, the capital of the power which had crushed her, and Babylon, the capital of Babylonia, her old ally and foe, by turns. It is only during the reign of the Kharacenic King Hyspases that the cry of the "enemy, the Elamite," is once again heard in Babylonia, though this was probably only for a short time. Notwithstanding all the wonderful finds that have been made, much more material is required to complete our records, and not among the least interesting would be those referring to the latest period, but documents of every kind will, it is needless to say, be welcomed.

Turning to Elam's western neighbor, Babylonia, we find again that much has been done, this time by the Germans, whose discoveries on the site of Babylon practically make the city live once more, and the time is not far distant when it will be the objective of the modern tourist as much, for instance, as the cities of India with their wonderful remains. According to Delitzsch, Babylon was a comparatively small city, not larger, in his opinion, than Dresden or Munich. The outer wall is shown in the accompanying plan. At the top is the north palace on the east of the Euphrates which at present flows from the northwest. Some distance down begins the Arahtu-canal, which, running in a southerly direction, passed through the southern wall and entered the Euphrates again near the point where it began to resume its southern course. The wall on the left bank of the river was continued on the right bank, and has, on its north side, the middle palace, and on its south the south palace. At this point lie the ruins of the Istar-gate, near the east end of which is the temple called Ê-mah. Canals protected the two adjoining palaces on the north and the south, the former being called the Merodach-canal, and the latter Libil-hegala, " (the canal) 'may it bring fertility.' " The square some distance south of the south palace marks the position of the great temple-tower E-temen-an-ki, "the House of the foundation of Heaven and Earth," explained by the Babylonians as "the Tower of Babylon." South of that lie the ruins of the great temple Ê-sagila, the renowned Temple of Belus. Running parallel with

the Arahtu-canal is the royal street, called, at its northern end, Aa-ibur-sabû. This was used for processions, especially that of the New Year, when the gods were solemnly taken to greet their king, Merodach, as one of the inscriptions brought back from Babylonia by the late George Smith states. The ceremonies at these New Year festivities apparently symbolize the visit of the king of the heavenly host to the captive gods, whom he comforted and released, much to the discontent of Nergal, god of war and disease, and also, as we may suppose, of death—whether he was identical with Ugga, the god of death *par excellence* or not, we do not at present know. The gods in prison were the followers of Tiawath, the Dragon of Chaos at the beginning of the world, and when Merodach destroyed her—the Dragon—her followers were placed in prison and bound. This ceremony of the release of the captive gods took place on the 8th of Nisan, the first month of the Babylonian year, corresponding partly with March and April. At the same time

“The gods, all of them—the gods of
Borsippa, Cuthah, Kis,
and the gods of the cities all,
to take the hands of Kayanu (and) the great lord Merodach
shall go to Babylon, and with him
at the new year’s festival, in the sanctuary of the king,
offer gifts before them.”

It is also probable that on the same occasion the ruling king of Babylon, whoever he might be, and of whatever faith or nationality (for the Babylonians had been ruled in their time by aliens from all parts of the east), was expected to “take the hand of Bêl,” though it may be doubted whether Darius Hystaspis, that stern worshipper of Hormuzd, ever consented to assist in what he must have regarded as a heathen ceremony. This street for the sacred processions in Babylon must, therefore, be regarded as having been the most noted roadway in the city, and we can imagine the long procession passing through the southern gateways, taking part in the ceremonies in the temple of Belus and at the Tower of Babylon connected therewith, crossing the Libil-hengala canal, then passing the royal palace and under the gateway of Istar, to the Chamber of Fate, which is regarded as having been situated at the eastern end of the Merodach canal. The distance from the gate of Uras, which was the city’s southern entrance to the Chamber of Fate, was a little over a mile and a quarter. Unfortunately, the remains of the Tower of Babel—that structure so renowned of old—have, within recent years, been cleared away to build the dam of the Hindi-yeh Canal, and instead of a great monument, the depression where its foundations were laid is now all that exists.

As might be expected, the spouse of Merodach, Zêr-panîtum, the principal goddess of the Babylonian pantheon, came in for a share of the honors. She appears to have been worshipped at the Tower of Babel along with him, but besides this she had a temple of her own on the east of the Istar gate, and its foundations still exist in a fairly complete state. . . . Enthusiasts will easily imagine what an interesting spot this would be to visit, with its sites from which the glory departed so many hundreds years ago.

In recent plans of Babylon it will be noticed that the form of the basement of the "Tower of Babylon" is square, whilst the old representations of that structure, which many of us have seen in old family Bibles and elsewhere, show it as having been circular in form, and tapering with a spiral ascent until the top was reached. These designs, however, were probably mere creations of the artist, who wished to produce something picturesque, and copied, perhaps, some drawing or description which he had met with of similar spiral towers of later date, which actually occur in the East as minarets of certain mosques. This however was not the shape of the Tower of Babel, which, as we know from the remains found in the country as well as from the ancient descriptions of the structure, was square in form, though the ascent was an inclined one, and though arranged the same way, was straight instead of curved.

The boundary stone of the time of Merodach-baladan I., who reigned about 1167 B. C. (this object was presented to the British Museum by the proprietors of the *Daily Telegraph*), seems to show an erection of this kind in three stages, with a shrine at the top. The horned animal or dragon in front apparently bears on its back a form of the wedge, the symbol of the god Nebo, so that it is possible that the staged tower behind may have stood for one of the emblems of that god. This would naturally form a reason for identifying the great temple-tower of Nebo at Borsippa (the Birs Nimroud) with the Tower of Babel, which is the traditional site of that erection. In all probability, however, the reason for placing the Tower of Babel in "the second Babylon," as Borsippa was called, and not in Babylon proper, lies in the fact that the temple of Nebo at Borsippa was the latest shrine where the ancient Babylonian worship was carried on.

The form of the temple-tower suggested by Perrot and Chipiez, in their *History of Art in Antiquity*, was either with sloping stages, as in the case mentioned above, or with a double ascent and level stages, as in their alternative design. It is doubtful, however, whether the Babylonian architects, notwithstanding their skill, had ever hit upon so elegant a form. The description published by the late G. Smith in the *Athenæum* of February 12, 1876, however, makes the lowest stage to be the greatest in height. Doubt may be expressed as to the outside inclined ascent, with its step-gradines, but some sort of protection would be needed against the accident of falling over the edge, and it is not at all improbable that such a thing existed as in the case of the temple-tower at Dûr-Sargina (Khorsabad), where the French excavations which preceded Layard's were made. According to Sir. H. Layard, moreover, a temple-tower somewhat of this form existed in the city of Calah (Nimroud), and is depicted in the somewhat fanciful restoration prefixed to his *Monuments of Nineveh*. A modification of my original design would, however, in all probability, be desirable; there was probably no ascent clinging, as it were, to the first stage, the top of which would be reached by a central staircase at right angles.³ Similar erections are described as existing in Chinese Turkestan by the traveller, Dr. von Le Coq.

³ See RECORDS OF THE PAST, Vol. II, pp. 322, et seq.

It is a great pity that we cannot appeal to the remains of the monument itself to settle the above question, as well as that of the existence of chambers within. According to Dr. Weissbach, however, the structure measured about 309 feet each way, and the height was about the same. Though this is only a third of the height of Eiffel Tower in Paris, it is still sufficiently imposing as a high monument. As will be seen from the picture, the lowest stage was much higher than any of the others. The topmost stage was the upper temple or sanctuary of the god Bel or Merodach, 80 ft. long, 70 ft. broad and 50 ft. high—a hall of considerable size. Full details concerning the structure were inscribed on a tablet which the late G. Smith had in his hands about 35 years ago, and which has apparently not been seen since. From the description of its contents which that scholar gave, it would seem to have been a document of the first importance, and it is needless to say, that we should all like to come across it again. Comparatively little publicity has as yet been given to the fact that it is wanting, and it is hoped that if the present owner should hear that inquiries have been made, he will be so kind as to produce it so that it may be studied and the results given to the world. Mr. G. Smith, at the time he published his description of the document, was about to start for the East, and it seems probable, therefore, that he saw it in this country. It may, indeed, have been offered for sale by a dealer and been sold by that dealer to its present possessor. It seems to have been a moderately large and fairly complete document, divided into paragraphs, probably by ruled lines.

Cylinders with inscriptions of Nabopolassar are said to have been found on the site when the remains of the Tower of Babylon were carted away some years ago, and in the interesting text which they bear, the king seems to say that it was not until after he had overthrown the power of Subartu (probably Assyria), which took place in the year 606 B.C., that he turned his attention to the rebuilding of Ê-temen-an-ki, "the House of the Foundation of Heaven and Earth," which he further describes, as does also his son Nebuchadnezzar later on as "the tower of Babylon." Nabopolassar died two years later, so that the rebuilding during his reign is reduced to within exceedingly narrow limits. The implements used in the rebuilding of the structure were of an exceedingly costly nature—nothing was too good for the reconstruction of the great temple-tower dedicated to Merodach. It is worthy of note, also, that the tower was to rival the heavens in height, whilst its foundations were regarded as having been placed "on the breast of the underworld." The "stages" seem to be referred to, and at the rear were apparently sanctuaries to Samas, Hadad and Merodach (these are not mentioned in G. Smith's description, though it is implied therein that the couch and golden throne of Merodach, referred to by Herodotus, were in the temple buildings on the western side of the tower). The gold silver and other precious things which Nabopolassar states that he deposited in the foundations must have disappeared many centuries ago, together with the figure of the king carrying a workman's basket similar, in all probability, to those in the British Museum, representing Assur-banî-âpli and his brother Samas-sum-ukîn doing the same thing. These were carved to commemorate the restoration, by those rulers, of the temple of

Nebo within Babylon, possibly one of the shrines on the eastern side of the tower.

Besides Nabopolassar, Nebuchadnezzar, his eldest son (who, two years later, succeeded him on the throne of Babylon), took earth, with offerings of wine, sesame-oil, and produce in (it may be supposed) one of the golden baskets which are referred to in the inscription, whilst his brother Nabû-sum-lîsir, took a rope and a wagon, in which Nabopolassar had placed a basket of gold and silver, and offered it—or him, his darling (*dudua*)—to the god Merodach. Was this a case of the redemption of the firstborn, and the substitution of his brother, with a gift, in his place? We do not know, and, to say the truth, it seems unlikely, as the kingly office did not prevent him who held it from becoming priest as well as king—indeed, the “great king” was often, at the same time, the great high priest.

Nebuchadnezzar also added to the splendor of this great fane, the type and token of Babylon’s greatness. All kinds of precious things were offered by him in Ê-sagila, the great temple of Belus adjoining on the south. He also “raised the head” of Ê-temen-an-ki with burnt brick and white-mottled lapis. After relating all he had done for the adornment of Babylon, the great king goes on to say, that “from Du-azaga, the place of the Fates, the shrine of the Fates, as far as Aa-ibur-sabu^m, the causeway of Babylon, before the gate of my lady (probably Zêr-panîtum), with small decorated tiles as the procession-street of Merodach he had decorated the path.”

Here Nebuchadnezzar describes the building and restoration of the walls of the city, and then continues:—

“Aa-ibur-sabu^m, the causeway of Babylon for the procession-street of the great Lord Merodach as a high terrace I filled in, and with small decorated tiles and blocks from a mountain-quarry I perfected Aa-ibur-sabu^m from the Holy Gate as far as Istar-sakipat-têbi-sa Street, for the procession-street of his godhead. And I connected (it) with what my father had made, and beautified the road Istar-sakipat-têbi-sa.”

Though Nebuchadnezzar’s description of his many works at Babylon is somewhat tedious to read, it is really very interesting when taken in connection with the ruins themselves, and there is no doubt that the German explorers of the site of the city will procure for students much more material for comparison as time goes on.

Although we, in this country, [England] have not done much—at least no account of British excavations has, of late years, been published, as far as my knowledge goes—our kinsmen over the sea, the Americans, have made some most successful researches in Babylonia. The site which they have more especially explored is that known as Niffer (they say that the word is at present pronounced Noufar), the ancient Nippur (Niffur). This site the Rabbins identified with the Calneh of the tenth chapter of Genesis, which is mentioned after Babel, Erech and Akkad, as one of the first cities of Nimrod’s (i. e., Merodach’s) kingdom.

Niffer lies on the eastern bank of the Euphrates, but at a distance of about 30 miles from the present course of that river, on the now waterless canal known as the Shatt-en-Nil, which divides it into two parts. Lay-

ard and Loftus give interesting descriptions of the ruin-mounds of this great Babylonian city. It is in the northeast corner of its extensive ruins that the remains of the great tower, resembling that of Babylon, arise. The old Sumerian name of this structure was Ê-kura, probably meaning "the temple of the land," though "Temple of the mountain" (or "Mountain-Temple") is also a possible rendering. It was dedicated to Enlila, who was called "the older Bêl," i. e., not Bel-Merodach, but his divine grandfather. The antiquity of this town and temple was regarded by the Babylonians as being as great as that of the world itself, for the tradition was that Merodach built or created both in the beginning, when Babylon, Erech and Eridu also came into existence. Professor Hilprecht describes this structure as attaining even now a height of 96 ft. above the level of the plain on which the city stood and around lie the fallen walls and buried houses which originally occupied its precincts. The erections here are of various dates, and extend back as far as 2800 years B. C. or earlier.

What the original height of the tower may have been we have no means of ascertaining, but in form it was a tower in stages, like those at Babylon, Borsippa, and elsewhere. Traces of three platforms were laid bare, and Professor Hilprecht says that no remains of a fourth could be detected, and that the accumulations of rubbish on the top were not sufficient to warrant the supposition that there had been ever more than that number.⁴ This, however, is naturally a point which is open to discussion. It is needless to say that, in the days of Babylonia's prosperity, the king's each vied with their predecessors in restoring and perfecting the structure, and changes in its form—slight ones, in all probability—seem to have been made from time to time, the kings who effected them having been Sargon of Agadé, Narâm-Sin, his son, Sur-Engur (2800 B.C.), Dungi, Sur-Ninib, Bûr-Sin, Ismê-Dagan, Kuri-galzu (1400 B. C.), Addu-sum-usur (about 900 B. C.), Esar-haddon (681 B. C.), and others, down to an unknown restorer of the structure 500 B. C. or later.

And here it is worthy of note, that though in the tenth chapter of Genesis the ancient Babylonians are represented as proposing to make brick, and burn them thoroughly, this latter precaution against decay was not always taken, not only here, but also in other places, for the whole seems to have been constructed of small crude bricks, except on the S. E. side of the lowest stage, which was faced with burnt brick of the same size. On each side of the structure, however, were channels of burnt brick to carry off the rain-water, and all four sides were plastered with bitumen in such a way that they sloped gradually outwards towards a gutter which carried the water away. The corners were adjusted roughly to the four cardinal points. The entrance was on the S. E. side, between two walls of burnt brick of the time of Sur-Engur, which led up, apparently by an inclined plain, to the courtyard, which was a large raised platform. It is stated by the explorers that this platform assumed the form of a cross by the addition of long extensions

⁴ For description of the excavations at Nippur see RECORDS OF THE PAST, Vol. II, pp. 35-62 and 99-118.

resembling buttresses. Many parts are curiously irregular in shape, and the angles of both enclosure and *ziggurat* (as these temple-towers were called) are not correctly placed, the northern corner of the latter pointing six degrees E. of the magnetic north.

Besides this great structure so closely connected with their religion, many other noteworthy constructions were found—walls, defences, towers, and courts—but not the least interesting were the remains of the houses of the people. A picture from a sketch by Mr. Meyer, published by the Rev. J. P. Peters, the originator of the explorations on the site, shows, in perspective, one of the streets of the city. It looks towards the S. S. W., and runs along the S. E. buttress of the temple-tower. In the middle of the unpaved street is a well-made gutter of burned brick, showing that some provision had been made to free the street of water. As to keeping the streets clean, however, that was another matter, and accumulations of rubbish seem to have been allowed to such an extent, that at last, instead of going up a step to enter a house, they had to make a little stairway to enable it to be entered from above. In all probability, therefore, little or no scavenging took place in this ancient city. Notwithstanding that there was much, from our point of view, which was sordid in the cities of Babylonia, the people of the land thought a great deal of them, and found them to be full of poetry and charm. The reason of this was that they were in many cases the centers of worship which had existed from of old, and they had therefore endeared themselves in this way to the inhabitants. Many cities of the modern East, however, are similar to those of ancient Babylonia in that respect.

In addition to Niffer, the Americans have also been excavating at the ruins known as Bismya, the ancient Adab, according to the tablets. It lies in a sand-swept belt of ancient Babylonia, in a region dangerous and deserted because far from water—a disadvantage which probably did not anciently exist. The discovery of the site seems to have been due to the Rev. J. P. Peters, the first really serious explorer of Niffer. The ruins have but a slight elevation above the surrounding soil, nowhere exceeding 40 ft., and the head of the expedition to Adab, Dr. Edgar J. Banks, describes them as a series of parallel ridges, about a mile and a half wide, divided into two parts by the bed of an old canal—the source of the city's ancient habitability.⁵

On the summit of the temple-tower being cleared, an inscription of Dungi, 2750 B. C., was found, and this discovery was followed by that of one of the time of Sur-Engur, 2800 B. C. Still lower they came upon a crumpled piece of gold of the time of Narâm-Sin, and just below that the large square bricks peculiar to the time of Sargon of Agadé became visible. At a depth of 8½ meters the explorers lighted on two large urns filled with ashes, and two meters lower still a smaller urn. Virgin soil was reached at 14 meters, at which depth the deposits consisted of thrown pottery of graceful design. These Dr. Banks regards as belonging to the most remote period of Babylonian civilization, namely 10,000 years ago, or earlier.

Other noteworthy antiquities were found on the site, among them being a head with a pointed beard, of a type which the finder regards as distinctly

⁵ See RECORDS OF THE PAST, Vol. V, pp. 225-236.

Semitic. The face is long and thin, and eyeballs of ivory had been inserted by means of bitumen in the eye-sockets made to receive them. This type is regarded as being new to the student of Babylonian art, and clearly distinct from the round beardless head of the Sumerian statues. Another object is a vase of blue stone carved with a procession of grotesque long-nosed figures, headed by two musicians playing upon harps. The garments and jewelry, and even the foliage of the background were originally represented by inlaid work, but with the exception of a piece of ivory which formed the dress of one of the figures, and a few fragments of lapis-lazuli in a branch of a tree, these have all disappeared. Numerous important fragments of vases were also found, and a sea-shell used as a lamp will probably shed light on the origin of the shape of early lamps.

In a trench at the western corner of the temple-tower the explorer practically dug out with his own hands an exceedingly interesting statue bearing the name of Daud, an early Sumerian king. Notwithstanding what may have been said on the subject, this is probably not an early occurrence of the name David, which, in Arabic, has that form. The statue was headless, but the head was found a month later, in company with another head, in the same trench, 100 ft. away. The temple excavated on this site bears the same name as that of the spouse of Merodach at Babylon, namely, E-mah, which, if written in the same way, means "the sublime house." Hammurabi, in the introduction to his code of laws, gives the name of one of the temples of Adab as being E-para-galgala, "the house of the great light," or, perhaps better, E-ugal-gala, "the great storm temple." Unfortunately it is a very imperfect account of the excavations at Bismya that I have had to use, or I should be able to give a much better description of the temples of this primitive site.

Three brick stamps were found, all of them with the words "Narâm-Sin, builder of the temple of Istar," testifying to the existence of a fane dedicated to the great goddess of love and war at Adab. Among other still smaller objects that may be mentioned cylinder-seals of the usual Babylonian type, one of them showing the so-called Gilgames and Enki-du—which probably represent entirely different personages—struggling with a lion and a bull respectively. This subject is very common on the engraved cylinders of Babylonia.

An interesting discovery in this site was that of an oval chamber at the south corner of the temple-tower, which, in the opinion of the explorers, had been formerly covered by a dome. At one of its ends was a 6 ft. circular platform, with a pit beneath it 4 ft. deep. The pit was found to contain ashes mixed with sand which had silted in to the depth of about 2 ft. Smoke marks upon the adjoining wall, and the evidences of great heat to which the brick work had been subjected, suggested that it was a crematory. Dr. Banks' description of the probable process of burning the bodies is as follows:—

"The body to be cremated was placed upon the platform; flames from a furnace in an adjoining room, passing through a flue, consumed the bodies, and the smoke passed out through a vent above. The ashes, unmixed with the ashes of the furnace, were either gathered for burial in urns, or swept into the pit below. This crematory, which was duplicated in a second chamber nearby, explains the absence of Babylonian graves."

Remains of dwelling houses with ovens and drainage also came to light.

Concerning the excavations at Tel-loh it is not my intention to speak at length, as I described rather fully many years ago, certain of the finds made by the French explorer, M. Ernest de Sarzec, on that site. It lies in a rather inaccessible region 15 hours north of Mugheir (Ur of the Chaldees) and 12 hours east of Warka (Erech). The principal building probably had its origin at an exceedingly early date—earlier, in all probability, than the time of the viceroy Gudea, who seems to have rebuilt it. In its area of about 174 ft. by 98 ft. it contains an extensive series of rooms—reception rooms, sleeping places, kitchens, etc. In later times the entrances to some of the chambers seem to have been regarded as too public, and they were accordingly partly walled up by a man named Addu-nadin-âhi, who belongs to a period after the date of Alexander.



KING OUR-NINA AND HIS FAMILY FROM TEL-LOH

The discoveries in this little place, strange to say, were much more important than its situation would lead us to expect. It has given us pictures of feats of arms, representations of conquests, and delightful things in the way of architecture, literature, and art. Though its architecture was rather massive for what we should consider to be really good, it is probably owing to this circumstance that the buildings have been preserved to us, and though its art has the same defect in many cases, it has given us the village-chief, and the lady who might well have been his consort and helpmate. There have been preserved to us likewise the god with the fire-stick (as he has been called), inscribed with Gudea's dedicatory inscription to Nin-Girsu, and the remains of the beautiful stele in which Gudea is depicted, led by a priest, into the presence of that same god, who, seated on his throne, waits to receive him. The antiquity of their art is illustrated by those remarkable cylinder-seal impressions bearing the name of En-gal-gala, existing in many forms, all very similar. There will doubtless be much dis-

cussion as to what the subject may mean, but the shouting man and the silent women (if we judge from the mouths of the figures) may have something to tell us as to the manners, customs, and beliefs of the people of that early period—probably 3,500 or 4,000 years before Christ. Of literature of the earliest period we have no real specimens. The work of M. de Sarzec has been very successfully continued by his successor, Colonel Cros.

Among the most important of the discoveries in Babylonia must be noted those of Mr. Rassam, Sir Henry Layard's old lieutenant, and the discoverer of Assur-bani-âpli's splendid palace at Nineveh, whence the finest of the Assyrian reliefs in the British Museum came. It is needless to say that Assyriologists are greatly indebted to him, for the number of the inscriptions which he sent to this country was enormous—hardly less than 100,000, if my memory serves me. Among the sites at which he worked were Kouyunjik (Nineveh); Balawat, where the famous bronze gates were found; Babylon; Borsippa, the site of the great temple of Nebo; Tel-Ibrahim, the site of the Babylonian Cutheh; Dailem, the ancient Dilmu, generally called Dilbat; and, last but not least, Abu-Habbah, the ancient Sippar, one of the great centers of the worship of the sun-god. The now venerable explorer describes this site as being an extensive series of mounds surrounded by a high wall of earth. The mound upon which the principal buildings are erected is about 1300 ft. by 400 ft., and contains, in Mr. Rassam's opinion, at least 300 chambers and halls. Of these he excavated about 130, when the work came to an end by the expiration of the firman.

According to the plan drawn up by Father Scheil, who worked there after Rassam for the Turkish Government, the city wall is an oblong rectangle, curving inwards at the northwestern end, to follow the course of the canal which formed the boundary of the city at that point. It was near that canal, to all appearance, that the *Ziqqurat* or temple-tower stood, but very little of that structure now remains. There were tablets everywhere, and notwithstanding the excavations which have been carried on since those of Rassam, the site is probably by no means exhausted. In these ruins were found the celebrated mace-head of Sargon of Agadé, and in all probability also the equally well-known cylinder-seal of Ibnî-sarru, that king's secretary. Then we have the beautiful "sungod-stone" carved for Nabû-abla-iddina—a precious thing which, apparently for safety, they buried under the bitumen pavement. Impressions of the design were made in clay, in case the original should be destroyed, and it was placed in a terra cotta box inscribed with the nature of the contents, so that people should know what it was as soon as they came upon it. Among the texts of late date is an ancient map of the then known world; and the oft quoted cylinder of Nabonidus, which refers to his restoration of the temple of the moon-god at Harran; the date of Narâm-Sin, son of Sargon of Agadé; and other important historical and archæological facts. Except the stone monument of Nabonidus giving details of the murder of Sennacherib and the downfall of Assyria at the hands of the Babylonians and the Medes, Professor Scheil has found nothing equaling in importance the discoveries of Mr. Rassam. Among Prof. Scheil's finds, however, may be mentioned some interesting clay figures of animals—dogs, bears, etc.—the most inter-

esting of them being one of the former resembling a dachshund, and inscribed with the following words:

“To the lady Gula (or)Bau I have made and presented a god of clay.”

To all appearances the dog was sacred to Gula, hence this inscription.

We have already seen, from the excavations at Bismya, that the Babylonians burned their dead in early times, and that, after the cremation, the ashes were collected and placed in urns. Ordinary burial, however, was also practiced, but instead of coffins, the custom seems to have been to enclose the body in a large jar before interment. Professor Scheil gives reproductions of some of the gigantic specimens of pottery which he found in which the body was apparently inserted entire.

We know that, in later days, the influence of Assyria extended as far as the Mediterranean, but we cannot say for certain at what date that influence began to make itself felt. Babylon was the pioneer country in that part of the world, however, and the Assyrians, who spoke the same language would naturally inherit the influence when the power of Babylonia began to wane. In all probability a certain amount of light is thrown on this point by the tablets found of late years in Cappadocia, and written in cuneiform characters. These documents consist of contracts and letters, and though the script is Babylonian in style, and the envelopes of the contracts, when they have them, are covered with impressions of cylinder-seals similar to those found in Babylonia, they are also, strange to say dated by means of eponymes—that is, by inserting the name of some official chosen for a year to date by—an exclusively Assyrian custom. These documents cannot be said to be written wholly either in the Babylonian or the Assyrian style, as far as the wording of the contracts is concerned, but with a legal phraseology which seems to antedate them both. The style of the writing is that of about 2000 B. C. or earlier, and notwithstanding possible arguments to the contrary, this may be regarded as their probable date. That Assyria could have had influence as far northwest as Kaisar-ieh, at that early period, seems to be impossible, but perhaps, notwithstanding its seeming dependence on Babylonia, the northern kingdom may have had more power than is at present generally imagined. The great deity of the place seems to have been Asur or Asir, the well-known head of the Assyrian pantheon, so that the influence of Assyria, and not of Babylonia, at that early date, seems to be set beyond a doubt. The dialect, which is Semitic, is peculiar, and of considerable importance. Such of the letters as I have been able to translate are what we should expect from a community living far from its home. The impressions of a cylinder seal on the envelope of an ancient Cappadocian letter, showing a four wheeled chariot, drawn by horses, are of considerable interest.

After this, it is not surprising that Sam'alla, a town at present represented by the ruins of Zenjirli, should have acknowledged, in common with other places in the west, the over-lordship of the great Assyrian king. The inscriptions found at Zenjirli extend from a period preceding the time of the Biblical Tiglath-Pileser (740 B. C.) to the reign of Esarhaddon, and it is probable that the allegiance of the people of Sam'alla only ended with



ESARHADDON HOLDING TWO PRISONERS

the downfall of Assyrian power in 606 B. C. Sam'alla was apparently the capital of an Aramaic state of some antiquity. The most important object of general interest is the stele sculptured with a representation of Esarhaddon holding, by cords attached to their lips, two prisoners, that nearer to him being Tirhakah, the well-known Ethiopian king of Egypt, whose identity is shown by the uræus ornament on his head. On the side are portraits of Panammû, the king of Zenjirli, Esarhaddon's vassal.

The inscription on the stele bearing the representation of Esarhaddon and his captives is noteworthy, as it shows how far Assyrian power extended. Besides the title of King of Assyria, he calls himself also King of Babylon, the King of Sumer and Akkad (practically the same thing), King of Kar Dunias (it is uncertain whether there be any distinction in this, but probably the words "all of them," which follow, explain it, and indicate that Kar-Dunias stands for Babylonia in general), King of kings of Egypt, Patros, and Cush or Ethiopia. He traces his descent in the usual way, namely, through Sennacherib and Sargon to Bêlibnî, son of Adasi, whom he calls the founder of Assyrian dominion (*mukîn sarruti mât Assur*). He then refers to his campaign against Tirhakah (*Tarqû*), King of Egypt and Ethiopia, whom he defeated every day for 15 days, and fought with personally on 5 occasions, taking in the end the city of Memphis. Among the captives were Tirhakah's women-folk and his son Usanahuru. The usual curses against anyone who should take away or destroy this monument, and appeals to future princes to read the inscription and perform the usual ceremonies of anointing etc., close the text.

Though the statue of the god Hadad found there is ugly, the inscription in relief which it bears is exceedingly interesting. It was written for Panammû, King of Sam'alla during the time of Tiglath-Pileser III, who began to reign in 745 B. C. Properly speaking, this statue was not found at Zenjirli, but at Gerchin, about half an hour to the northeast. As Panammû calls himself King of Yaudi, it is clear that that was the name of the district, and we shall have to be careful not to confuse it with the Assyrian *mât Yaudi*, which stands for the Kingdom of Judah. The remaining Aramaic inscriptions give the succession of 6 rulers, who followed in a genealogical line, the later ones at least acknowledging the over-lordship of Assyria.

And now we come to the splendid discoveries, likewise made by the Germans (to whose enterprise the world owes also those at Babylon, Assur, Al Hibba, Zenjirli, and elsewhere) in the ruins near Boghaz-Keuy, the identity of which site is no longer doubtful, any more than is the nationality of the people whose capital the ancient city was.

Boghaz-Keuy, upon which all eyes interested in west Asian exploration are now set, lies 5 days journey west of Angora, and not far from the sculptured rocks of Yasli-kaya. Two classes of tablets were found there, some of them archaic, and pointing, like those from the neighborhood of Kaisarieh, already described, to the period of Hammurabi of Babylonia; the others in a much simpler style, sometimes in Babylonian, but often in that unknown language of which the Arzawan tablets from Tel-el-Amarna are examples and of which provisional renderings have been made by the Scandinavian scholar Knudtzon.

About 2,500 fragments of the kind which had been expected—texts like that in the Museum of the Liverpool Institute of Archæology and those brought back from that part by M. Ernest Chantre—came to light, many of them being of considerable size. Naturally it was those in the Semitic Babylonian language which occupied the attention of the explorer first, as it is always best to proceed from the known to the unknown. All these inscriptions, which are likely to become the key to the Hittite language, are described as being "Diplomatic documents," like the Tel-el-Amarna tablets.

With regard to those of the nature of letters, it is stated that most of them are from Wasmuaria, or, in full, *Wasmuaria satepua Ria Ria-masesa mai Amana*—that is, as generally read in Egyptian, *User-maat-Ra setep en Ra Ra-messu mery Amen*, *i.e.*, Ramesses II., and Hattusilu, the Chetasar or Hattusir of Egyptologists. It is needless to say, that these new texts promise to change our ideas concerning the pronunciation of Egyptian entirely, and many familiar forms with which Egyptologists have presented us will have to disappear from our histories.

The first great document found was the text of a contract between Hattusilu and *Ria-masesa mai Amana mâr Mimmuaria bin-bin Min-pahri-taria*, that is "Ramesses beloved of Ammon, son of Seti I, grandson of Menpehti-ra" (to adopt the common spelling), or Ramesses I. Both parties call themselves either "great king, king of Misri (Egypt)" or "king of Hatti," as the case may be, and the whole text of the contract is practically the same

as that found in Egyptian at Karnak. In this new version of the celebrated treaty there is also reference to the text of the silver tablet (*sa ina rikilti muhhi duppi sa sarpi*). The list of Hittite gods, however, is unfortunately wanting. It is noteworthy that the Hittite kings, like their brothers, of Egypt, called themselves "the sun."

In fulness of time we shall probably come to know not only how to translate the so-called Hittite characters, but we shall also learn the names of their deities, of which so many interesting figures exist. We may even find the identity of the so-called pseudo Sesostris, and that elegant little Hittite king from Bir (Birejik), whose relief has been so many years in the British Museum. There are also numerous Hittite seals, which ought to be of interest when we can read the strange inscriptions with which some of them are engraved.

I have had so much to report upon that I have at present neither time nor space to say anything about the interesting discoveries made at Qal'ah Shergat (Assur), the old capital of Assyria. All being well, however, this will serve for another occasion, should a communication thereon be desired. It is needless to say that the discoveries on that site, which the all-favored Germans have likewise excavated, are of considerable importance. But in order to understand thoroughly the explorations made at Assur, excavations at Nineveh in its larger sense are needed as well—that Nineveh which Jonah is described as having taken three days to traverse. All the points showing traces of ancient towns and cities ought to be explored, and then, perhaps we should find something which would enable us to understand that statement. In any case, much would probably be added to our knowledge, whether excavations were made there or at any other site or sites in Babylonia and Assyria.

THEOPHILUS G. PINCHES.

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HOLED STONE.—Some time ago a farmer at Kerro, St. Just-in-Penwith, Cornwall, reported the finding of a large stone with a hole in the center. On 14 August, 1907, Mr. H. King and Mr. B. C. Polkinghorne had the ground cleared around it and found it to be a circular slab of granite 48 in. in diameter and 12 to 14 in. thick. In the center was a cylindrical hole, 8 in. in diameter, and 8 in. deep, apparently worked by the use of iron tools. The interior surface was smooth, showing no tool marks. Upon raising the stone, pieces of granite which had held it in a horizontal position were disclosed. Underneath much charcoal, but no bone, was found. The hole contained plant debris. The investigators suggest that the hollow was a receptacle for cremated bones, if not for a small urn; and since the excavations, one of them has seen a small circular slab found some years ago near the same spot; possibly it was the cover.

BOOK REVIEWS

HAVERFORD COLLECTION OF CUNEIFORM TABLETS¹

IN HIS introduction, Professor Barton discusses what he terms "two unique tablets" which are in the general shape of a tag. The inscription of the one he reads "4 kors and 81 *qa* of wheat flour, boat of Ur-Kal, account of Manati. 6th day, month Zibku." The tablet also bears a seal impression. The other tablet reads, "2 kors 10 *qa* of wheat flour, day 26th." The seal impression of this tablet reads: "Gal-Ninshakh scribe, son of Ur-Ningirsu." Barton concludes that they are Old Babylonian bills of lading and perhaps were retained in the archives as duplicates of those delivered to the boatmen who conveyed the grain to its destination. Such tablets, termed labels or tags, are quite numerous. The designation "bill of lading" in this instance seems appropriate. Others would be more properly called tags, having been hung upon the necks of sheep; also upon the necks of slaves. Such are inscribed "Sheep belonging to the shepherd X;" and "Slave belonging to X," respectively. Others are labels containing the address of the individual for whom the article sent was intended, often containing, as Barton's tablets do, the seal of the sender.

In his discussion of "Messenger Tablets" dated in the reign of Dungi and Bur-Sin, Barton shows that they furnish certain information concerning the political organization of the empire. Nippur, Susa, Adamdun and Sabu were at this time ruled by pateses. Seventeen other cities, including Anshan, are ruled over by NIN-MI, "governors." More than one-third of the references are payments to officials in connection with trips to Susa. This leads Barton to conclude that, inasmuch as Ur, the capital of Ur dynasty, is only mentioned two or three times, Susa was the place of residence of Dungi and Bur-Sin, and especially as Susa at this time was a subject power and also because Dungi had rebuilt the temple of that city.

One of the most important additions to our knowledge which this volume makes is the determination of 11 new numerical values. Barton finds that the totals in an account tablet published by him reveal a new numeral, which can be shown by the sum of the items composing the total to designate 216,000. He then observes that the same numeral occurs in a tablet said to belong to the I dynasty of Babylon, the text of which was copied and published by Hilprecht (BE, XX, No. 29). It appeared in a series with several others, but has never been interpreted. Barton shows, by a study of the method of arranging numbers on the Nippur tablet, that these numbers represent successive multiples of 36,000, and are therefore notations for 72,000; 108,000; 144,000; 180,000; 216,000. As the notation for this last number coincides with that discovered on the tablet published by Barton himself, the correctness of his reading of the whole series is demonstra-

¹ *Haverford Library Collection of Cuneiform Tablets, or Documents from the Temple Archives of Telloh.* Autographed and edited by George A. Barton, Professor in Bryn Mawr College, Part II. Philadelphia: J. C. Winston Company, 1909.

Professor Barton issued Part I of this work in 1905. Other parts are expected to follow, the last of which will include full indices of names, etc. The tablets are all written in Sumerian.



HAVERFORD COLLEGE COLLECTION, 27. PLATE 64

RECORD OF QUANTITIES OF LAND APPROPRIATED BY THE KING AND
ENTRUSTED TO VARIOUS OFFICERS. LENGTH, $6\frac{1}{2}$ IN.; WIDTH $5\frac{1}{2}$ IN.;
THICKNESS, $1\frac{1}{8}$ IN. NO DATE GIVEN.



CLAY LABELS OR TAGS HAVING HOLES THROUGH WHICH A CORD PASSED. SOME CONTAIN THE SEAL IMPRESSIONS OF THE SENDER, WHILE OTHERS CONTAIN RECORDS; — "ONE SHEEP, THE SHEPHERD UZIILU."

ted. He then brings the list of numerals in the text published in the *Babylonian Expedition* into comparison with a Neo-Babylonian syllabary published in CT., XII, 24, from which the definitions are broken away, and finds the same series. This series has a different notation for 216,000. He rightly infers that this is another notation for that number, and finds confirmation of this in a variant of the tablet in BE. On the tablets published in BE two numerical notations remain. Having discovered the principle on which the numbers on the tablet were arranged, Barton shows that these can only designate 432,000. He then notes that there are two remaining numerals on the Neo-Babylonian tablet in CT, XII. A comparison of these with the numbers on the University of Pennsylvania tablet shows that they are clearly abbreviated forms of notations already identified for 216,000 and 432,000.

Barton has not only added the correct reading of these numerical notations to our knowledge, but has shown that the numbers in the Neo-Babylonian syllabary were copied from a list similar to the earlier one copied by Hilprecht.

Professor Barton's work is an important contribution to the reconstruction of the Babylonian system of writing mathematical terms. Beside the points of historical value which have been mentioned, he has determined other facts such as the price of wheat in this pre-Abrahamic age. This work, also, is an important contribution to sumeriology. It is to be hoped he will be able to bring the publication of these records to a speedy completion.

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BABYLONIAN LEGAL AND BUSINESS DOCUMENTS¹

THE volume contains 138 autograph copies of tablets, half of which were found at Nippur, and half at other Babylonian sites, chiefly Sippar. Not a few of the Sippar documents and practically all of the Nippur, are written in Sumerian. This work will stand as a monument to Poebel's ability and industry, inasmuch as he is a self taught Sumerian scholar and has besides this volume, contributed an important paper on Sumerian grammar to one of the scientific journals. In this volume he devotes himself especially to the grammatical explanation of the Sumerian tablets.

From the inscriptions found at Nippur belonging to the time of Hammurabi, about 2000 B. C. Poebel shows that the various kinds of documents were drawn up according to fixed rules. There existed special schemes for the different classes of documents, according to which they were drawn up, for example, purchase and exchange documents, division of an inheritance, adoption and manumission documents, marriage contracts, deeds of loan, leases, etc., were all written according to fixed formulas. Poebel shows that these schemes took the place of a mental formula into which it was only necessary to insert the description of the object and the names of the parties in the contract. He refers in this connection to the famous so-called Sumerian family code, which indeed is no code at all, but certain parts of such formulas written up for the use of the lawyers or scribes, who had to draw up marriage contracts, adoption documents, deeds of leases, etc. We thus get a very valuable inside glance into the work of the official scribes as well as their law schools of that age. By this method their work was facilitated and became rather mechanical, as at the present time, when printed blanks are generally used.

Poebel shows that such fixed schemes existed also in other Babylonian towns, on the whole resembling the Nippur schemes, but differing from them in a great number of more or less important details. We obtain by this observation a most efficient means of determining the place of origin of contract tablets.

Another marked feature of the Nippur tablets is treated in Chapter III. The seal impression, whenever a contract was sworn to, was not made with a seal owned by the individual, but with a seal expressly cut for the occasion by an official engraver, called the *burgul*, who besides the scribe is always mentioned in these contracts.

Chapter IV contains a compilation of all date formulas as far as they are known occurring on tablets of the First Dynasty from Hammurabi down to the end of the Dynasty. In these earlier times it was not the custom to date contracts by the year of a king's reign as later, but with a

¹ *Babylonian Legal and Business Documents from the Time of the First Dynasty of Babylon, Chiefly from Nippur.* By Arno Poebel, Ph.D. (Being Series A, Volume VI, Part 2 of the Babylonian Expedition of the University of Pennsylvania; edited by H. V. Hilprecht.) Published by the Department of Archæology with the Eckley Brinton Coxe, Jr., Fund.

formula which mentioned an event occurring in the respective year, as *e. g.*, the year in which King X, on New Year's day dedicated a statue, weapon, or the like, to god Marduk. The list of these date formulas, which are practically all written in Sumerian, is important from more than one point of view. It is a means to reconstruct the history of the time, as Poebel has done in Chapter VI, inasmuch as a great number of historical events are alluded to in these formulas. As the dates mention, and often describe the votive objects presented to the gods, this list gives us important information also with regard to the Babylonian religion of that time. The formulas are very valuable for our knowledge of Sumerian, especially on account of the great number of variants which Poebel has presented in a very careful manner.

In Chapter VI Poebel gives an outline of the history of the First Dynasty from Hammurabi to Samsuditana. This is based upon the chronicle which has been recently published by Dr. King of the British Museum, also upon the inscription and letters of Hammurabi and his successors, and the code of Hammurabi, and especially on the information derived from the date formulas. This is the first time that such a sketch has been outlined in such a comprehensive manner.

As to the contents of this sketch, mention may only be made to Poebel's conclusions from two tablets published by him. The first tablet (No. 68) is dated in the reign of Ili-ma-ilum, which Poebel formerly showed to be a contemporary of King Samsuditana, and identical with the first king of the so-called Second Dynasty. This conclusion has been fully corroborated by the publication of a Babylonian chronicle by Dr. King of the British Museum.

The second tablet, the date of which had been published before, though incorrectly, and misunderstood, gives us, according to Poebel's translation, the important information that a fight took place between King Samsuiluna and another prince with the west Semitic name Jakh-abu. The conflict ended with the defeat of the latter.

In Chapter VII Poebel translated a Sumerian inscription (No. 130 of his volume) of an earlier king. This inscription, which so far as the almost entirely destroyed reverse shows was a donation to a temple, was witnessed by several governors and was rewritten and dated in the time of the First Dynasty. Fortunately the obverse, which relates the exploits of the king, especially the capture of a town, Al Halim, is better preserved.

This volume is a valuable addition to the series of which it is a part, and a very important contribution to Sumeriology, a science which not a few Americans have helped to firmly establish.

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RECENT BULLETINS OF THE BUREAU OF AMERICAN ETHNOLOGY

BULLETINS numbered 38 and 41 of the Bureau of American Ethnology have recently appeared. Number 38 is by Nathaniel B. Emerson on the *Unwritten Literature of Hawaii*, the sacred songs of the Hula collected and translated with notes and an account of the Hula. This is the first of a series on Hawaiian ethnology which has been made possible by the act of Congress 30 June, 1906, which extended the field of the Bureau to include the natives of the Hawaiian Islands. Previous to this their operations were restricted to the American Indians.

This Bulletin contains a wealth of native Hawaiian songs which it will be impossible to collect a few years hence. These, together with the remarks of the author, give an interesting insight into the artistic sensibilities of the earlier Hawaiians.

Mr. Emerson does not dwell on the origin or migration of the native Hawaiians, but their custom of practicing one of their dances—The Hula Ohelo—about a fireplace, indicates that the origin of the dance must go back to a time when they lived in a more rigorous climate than Hawaii offers. "The fact," he says, "that the climate of the islands, except in the mountains and uplands, is rarely so cold as to make it necessary to gather about a fire seems to argue that the custom of practicing this dance about a fireplace must have originated in some land of climate more austere than Hawaii."

Bulletin 41 is by Jesse Walter Fewkes on the *Antiquities of the Mesa Verde National Park* and deals with the Spruce Tree House. The numerous illustrations taken before and after the extensive repairs made by Dr. Fewkes indicate the value of his careful work, which will not only preserve this interesting "type ruin" but make its original appearance more evident to the casual visitor as well as the archæologist.

His conclusions are worth quoting:

From the preceding facts it is evident that the people who once inhabited Spruce-tree House were not highly developed in culture, although the buildings show an advanced order of architecture for aborigines of North America. Architecturally the cliff-dwellings excel pueblos of more recent construction.

The pottery is not inferior to that of other parts of the Southwest, but has fewer symbols and is not as fine or varied in colors as that from Sikyatki or from Casas Grandes in Sonora. It is better than the pottery from the Casa Grande and other compounds of the Gila and about the same in texture and symbols as that from Chelly canyon and Chaco canyon.

The remaining minor antiquities, as cloth, basketry, wood and bone, are of the same general character as those found elsewhere in the Southwest. Shell work is practically lacking; no objects made from marine shells have been found.

The picture of culture drawn from what we know of the life at Spruce-tree House is practically the same as that of a pueblo like Walpi at the time of its discovery by whites, and until about 50 years ago. The people were farmers, timid, industrious, and superstitious. The women were skillful potters and made fine baskets. The men made cloth of good quality and cultivated corn, beans, and melons.

In the long winters the kivas served as the lounging places for the men who were engaged in an almost constant round of ceremonies of dramatic character, which took

the place of the pleasures of the chase. They never ventured far from home and rarely met strangers. They had all those unsocial characteristics which an isolated life fosters.

What language they spoke, and whether various Mesa Verde Houses had the same language, at present no one can tell. The culture was self-centered and apparently well developed. It is not known whether it originated in the Mesa Verde canyons or was completely evolved when it reached there.

Although we know little about the culture of the prehistoric inhabitants of Mesa Verde, it does not follow that we cannot find out more. There are many ruins awaiting exploration in this region and future work will reveal much which has been so long hidden.

The pressure of outside tribes, or what may be called human environment, probably had much to do originally with the choice of caves for houses, and the magnificent caverns of the Mesa Verde naturally attracted men as favorable sites for their houses. The habit of huddling together in a limited space, necessitated by a life in the cliffs, possibly developed the composite form which still persists in the pueblo form of architecture



THE LAST AMERICAN FRONTIER¹

PIONEER life has a peculiar fascination, and so a survey of the development of our frontier is of general interest. Under the title of *The Last American Frontier*, Professor Frederic L. Paxson has written a very interesting account of our frontier history in its steady westward movement. The author claims that the "influence of the frontier has been the strongest single factor in American history, exerting its power from the first days of the earliest settlements down to the last years of the XIX century, when the frontier left the map."

The history and development of the different trails across the country and their effect on the settlement of the land is very interestingly told, as well as the last of the Indian wars and uprisings, and the first entrance of the railroads.

The book is of a popular character, the references to the sources being confined to a few pages at the end of the volume. However, in the *Preface* Mr. Paxson states that he hopes "before many years, to exploit in a larger and more elaborate form the mass of detailed information on which this sketch is based." Such a volume would be of great value to the more specialized historians and it is to be hoped that it may be forthcoming in the near future.



PREHISTORIC CONGRESS OF FRANCE.—The Prehistoric Congress of France will hold its sixth session at Toures 21-27 August, 1910. Interesting excursions, as well as visits to local museums, private collections and archæological monuments have been planned. Among the subjects for discussion are the Palæolithic remains in Touraine, the geographical distribution of the flint industries of the Grand Pressigny and the *puits funéraires* of the basin of the Loire.

¹ *The Last American Frontier*. By Frederic Logan Paxson. Illustrated. Pp. ix, 402. Price \$1.50, net. The Macmillan Company, New York.

EDITORIAL NOTES

EXPEDITION FROM UNIVERSITY OF UTAH.—Under the auspices of the University of Utah, Professor Byron Cummings in 1909 carried on archæological excavations in the San Juan country. A large quantity of material was obtained, and the work was otherwise successful.

POSSIBLE EVIDENCE OF HUMAN SACRIFICE AT BABYLON.—H. de Genouillac has published a Babylonian tablet which contains a dedication of slaves in the same terms in which animals were devoted for sacrifice, which seems to indicate that these were designed as victims for human sacrifice.

PORK IN ANCIENT BABYLONIA.—According to A. Ungnad, pork was highly valued as food in the time of Hammurabi and was offered as part of the sacrifices in the temples. There is a record of the severe punishment of a thief who stole a pig from the temple court, and lists of temple-provisions mention various parts of swine.

A ROMAN MILITARY DIPLOMA.—A few years ago a military diploma was found at Tricorium, Italy. It is now in the museum at Belgrade. It is engraved on both sides of a bronze plate about 6 in. by 5.9 in. and is dated 29 June, 120 A. D. Its inscription proves that Hadrian held the *tribunicia potestas* for the fourth time in that year.

THUMB MARKS IN BABYLONIA.—C. H. W. Johns has published in the *Proceedings of the Society of Biblical Archæology* fragments of a Babylonian tablet which seem to show an attempt to draw, on an enlarged scale, thumb marks as made on clay. This suggests the question, Were thumb marks used for the purpose of identification in Babylonia?

PUNISHMENT OF SLAVES AT ATHENS.—Whipping was used in Greece as a punishment for slaves. At Athens the number of stripes inflicted for any given offence appears to have been equal to the number of drachmas fine for a free man for the same crime; the number was proportioned to the deed, and a magistrate was forbidden to inflict more than 50. In Athens the slave had certain legal rights, and the laws concerning their punishment, were more humane than in other parts of Greece.

GREEK INFLUENCE IN ORIENTAL ART.—In a recent article, Adolf Fischer calls attention to certain oriental statues which show the influence of Greek art. He cited in particular a wooden statue of the goddess of Mercy and two female statues of dried lacquer which show soft round lines in the drapery and graceful forms which recall Greek work. The bronze statue of Kwanyin at Tatsingör, near Peking, also shows this Greco-Indian influence. A series of Chinese grave-reliefs which he reproduces show great similarity to chariot processions in Assyrian or Babylonian sculptures.

ARCHÆOLOGICAL TOUR IN TIBET.—The Indian government has sent Mr. A. H. Francke on an archæological tour in British Western Tibet. Interesting results are likely to follow. At Leh, he discovered the graves of some Dard chieftans containing ancient earthen pots and metal ornaments. The method of burial was somewhat similar to that practiced in Egypt. He has also made finds near Tsaparang, the kingdom mentioned by Andrada in 1623 and claims to have deciphered the legend of the seal of the Dalai Lama of Tibet as “May you be happy!”

THREE IRON AGE GRAVES IN DENMARK.—The Copenhagen Museum of Antiquities has recently published a description of the finds in 3 Iron Age graves discovered in the island of Lolland, southern Denmark. One of the 3 female skeletons found had been buried with much jewelry, a pearl necklace, gold and silver ornaments of unique workmanship, silver buckles and hairpins and a gold finger ring. The grave with its contents has been placed in the Museum, together with some Roman glass, bronze household utensils, bearing the name of the Roman maker, and a small box of toilet articles also found with the body.

THE PEABODY MUSEUM EXPEDITION TO SOUTH AMERICA.—The Peabody Museum Expedition to South America returned to Cambridge last year. The past 3 years were spent in explorations on the headwaters of the Amazon, studying the native tribes of the little-known regions of the interior of Peru and Bolivia. A large amount of material along various anthropological lines was gathered. Collections were made of implements, weapons, utensils, ornaments and articles of dress. Incidentally, natural history collections were made, meteorological observations taken and topographical work done.

CYCLOPEAN WALL IN CEYLON.—In *Man*, 1909, 104, Mr. J. B. Andrews reports on some early defensive works visited by him in Ceylon. They consist of a cyclopean wall surrounding Mapagala Hill, close to the famous rock fortress of Sigiri. It is similar to others found in England and France. Enormous unhewn stones are piled on top of one another without the use of mortar. It is probably of Neolithic date. Similar fragments of walls exist on Sigiri Hill, but most of the walls there are different, the stones being smaller, more regular, and put together with some order. These latter ones are attributed to King Kasyapa, about 500 A. D.

ARCHÆOLOGICAL COURSES IN UNIVERSITY COLLEGE.—“Professor Ernest Gardner is giving in connection with University College, London, this session the following courses in Classical Archæology: (1) ‘Archæology in Relation to Literature,’ extending from ‘Literature and Archæology,’ delivered last Friday to ‘Alexandrian and Roman Poets,’ March 18; (2) ‘Classes for the Study and Discussion of Archæological Subjects;’ (3) ‘Greek Sculpture: Later Period,’ which began last Thursday week; (4) ‘The Yates Lectures,’ on Vases, Epigraphy etc.; and (5) ‘Lectures in Greece,’ which will be arranged to fit into the Easter vacation.” [*Athenæum*, London, Jan. 29.]

INDICATIONS OF HITTITES IN GREECE.—“New readings of cuneiform texts with the names of the Hittite kings of the XIV century B.C. show one of the names to be identical with that of Myrtilus, or Myrsilus, the charioteer of Pelops, and seem to put new meaning into the old legends of Amazons and other Asia Minor peoples who came in contact with the Greeks on both sides of the Ægean. Another important discovery is the purely Aryan and Sanscrit character of the names of gods worshiped by a people who adjoined the Hittites on the east and were closely connected with them. This suggests an eastern channel for the entrance of Aryan influences into Asia Minor and Greece, in addition to the northern one by way of Thrace and Phrygia.”

SECTION OF THE ANCIENT DEFENSES OF MEXICO FOUND.—According to reports from the City of Mexico, workmen digging a trench for a water main in the street known as Calle Cincode Mayo, came upon a large amount of piling. This had been thought to have formed a pier in the lake surrounding the ancient city, but now experts say that it served as a palisade intended to protect the Aztec capital from the brigantines which Cortes had built upon the lake. At this point Lake Texcoco formerly washed the base of the teocalli, or shrine of the Aztecs. The supposition is that the city was unprotected here and therefore these pointed cypress stakes were driven in during the siege so that their tops were just concealed by the water. They are in a good state of preservation.

CONGRESS OF AMERICANISTS.—In recognition of the centenary of the independence of Argentine and Mexico, the sessions of the International Congress of Americanists for 1910 will be held in Buenos Aires, May 16 to 21, and in the city of Mexico, September 8 to 14. “It is proposed to organize a trip for the members by land from the northwest frontier of Bolivia and Peru taking ship for Mexico at the Port of Callao. In Bolivia and Peru various places of archæological interest will be visited. From Lake Titicaca the excursion will visit Potosi, La Paz and Tiahuanaco, and proceed to Puno and Cuzeo. Going by train to the Port of Mollendo, by steamer thence to Callao, Lima and various cemeteries and ruins of importance will be seen, such as Ancon, Pachacamac, etc.”

THE COLIGNY CALENDAR.—At a recent meeting of the British Academy, Sir John Rhys discussed the Coligny calendar, found in 1897. The fragments of the bronze tablet containing the calendar inscription were found at Coligny, 10 miles north of Lyons. Other fragments with no inscriptions were also discovered which, when fitted together, formed an almost perfect statue of a god, probably the god of the temple where the tablet was set up. The tablet was nearly 5 ft. long by 3 ft. wide, and proved to be a calendar for 5 years. The language was Celtic but not Gaulish, and seemed to fit into an early stage of what became the Irish language as known in old manuscripts and inscriptions. Two intercalary months were included. One of them stood before the month of Samonios or June, and marked that as the beginning of the year, the other came in the third year in front of the

first month of the other half of the year, *i. e.*, Giamonios, or December. The first year was most correct, astronomically speaking, and Rivros or August was the most important month in it. Rivros was named after the god Rivos, who seems to have been considered as living among his people during that month, or part of it. In the other 4 years his priest seems to have represented him.

POSITION OF SPARTAN ART.—In a paper read before the annual open meeting of the British School at Athens on 17 December, 1909 Mr. M. S. Thompson declared that the usual statement that Sparta was inartistic as compared with the rest of Greece should be modified in view of the examples of Laconian art from the VIII and VII centuries B. C. The series of carved ivories, ending suddenly about 600 B. C., is evidence that Sparta was for a long time closely connected with the East. The probable route over which this ivory came into Sparta was along the southern islands of the Ægean, so that the capture of the Achæan seaport Helos, about the end of the XI century, B. C., would coincide with the beginning of the abundance of ivory in Laconian art. The abrupt cessation of this trade about 600 B. C. seems due first to the rise of Median power and the political upheaval in Asia Minor involving the fall of Nineveh and the siege of Tyre and, secondly, to the commercial rivalry of Naucratis combined with the extension of Ionian enterprise in the south. Possibly this loss of trade induced Sparta's interference in Ionian politics in the VI century, B. C. In conclusion, Mr. Thompson pointed out that the historical accounts of Sparta, written from the Athenian standpoint, refer to the period of her artistic decline and isolation. Apparently during the VIII and VII centuries Spartan enterprise was outside the sphere of Ionian expansion and this may account for the fact that the best period of Spartan culture is unrecorded in history.

WORK AT CORBRIDGE-ON-TYNE, ENGLAND.—During the season of 1909 work was carried on at Corbridge-on-Tyne in front of the two large granaries which showed that each of these buildings had a portico of 4 pillars. The portico of the east granary appears to be contemporary with the building. It has masonry columns, originally plastered. The other part is of later date, probably of the time of Severus, when the granary itself seems to have been rebuilt. In front of the "Fountain" postholes of an early wooden building were found, about 9 ft. below the present surface. The "Fountain" is possibly from as late a date as the time of Severus. Remains of what was probably the watercourse supplying the "Fountain" during the later part of the Roman period were traced. At one part the clay bank which supported it crossed the remains of a granary about 56 ft. long, the floors of which were raised on cross walls and masonry piles. In one corner of this was a rubbish pit where fragments of Samian ware were found, indicating an occupation of the site in the I century, A. D., and possibly in the time of Agricola.

North of this was a bath house, with a pillard hypocaust under the 3 rooms, and 2 apses of later date, one of which was probably the cold bath. Near by were the remains of a smelting furnace, in which a pig of iron weigh-

ing 3 hundredweight was found. What was probably the north ditch of the town was also discovered. Traces of cobble pavements and a small piece of wall were found on the north side.

The most notable among the objects found were a baked clay mould for a figure 5 in. high, with helmet, shield and crooked club, and a stone panel with two draped female figures, one representing Fortune, holding a cornucopia and a rudder.

END OF THE WORK AT THE SANCTUARY OF ARTEMIS ORTHIA, AT SPARTA.—The British School at Athens, after 4 season's work, have concluded the excavations at the sanctuary of Artemis Orthia at Spatra, so that now its whole history may be traced. The earliest remains found comprise a layer of ashes, pottery and fragments of bronze resting on virgin soil in a hollow by the bed of the Eurotas. Successive altars and temples were built upon this spot. The old wood and brick temple was superseded at the beginning of the VI century by a stone temple in the archaic Doric style, with a colored pedimental group of lions; this temple was reconstructed in the Hellenistic period. At the beginning of the III century, A. D., a theater was built around the altar with the facade of the temple in the position of the stage building. Here many spectators witnessed the scourging of the boys, which formed a part of the rites in honor of the goddess. During all periods the altar occupied the same position, and the remains of 4 superimposed altars have been found.

Among the newly discovered objects may be mentioned a figure relating to the goddess of child-birth, Eileithyia, who was worshiped near by and two groups, one in terra cotta and the other in ivory, each representing a man and two women. Pausanias notes that, at a certain Spartan sanctuary, Artemis, Eileithyia and Apollo Carneius were worshiped together; it seems likely that these groups represent these 3 deities.

WORK OF THE SCHOOL OF AMERICAN ARCHÆOLOGY AT SANTA FÉ.—Dr. Edgar L. Hewett, Director of the School of American Archæology, authorizes the following statement concerning the work of the School and the Museum of American Archæology at Santa Fé:

“The first of the Pajarito rooms is finished, the collections are being installed, and the room will be open to the inspection of the public from now [17 Feb., 1910] on, as a specimen of what the School is trying to accomplish, by way of representing the ancient civilizations of the southwest. The art work in these rooms, which has already attracted wide attention, is supported by Frank Springer, of Las Vegas.

“The work of the historian Bandelier on the documentary history of the Rio Grande valley is well along, Mr. Bandelier's introductory report having been sent in for publication. This work on the early history of New Mexico is made possible by the generosity of Mrs. John Hays Hammond of Washington City.

“Miss Anna L. Wolcott of Denver has contributed the funds for the equipment of a laboratory for the precise recording of the vanishing languages, myths and songs of the Indian tribes. The instruments for this

work have been ordered from Paris, and will be installed within a few weeks. This will be the principal laboratory for this class of work in America.

“The National Museum of the United States has returned to our Museum a valuable collection of material from the Cliff Dwellings in the Pajarito Park, which was sent to Washington some years ago, and has entered into a system of exchanges with our Museum which will result in the placing here of valuable collections from various parts of the country. The secretary of the Smithsonian Institution has expressed his great satisfaction with the development of a first-class museum in Santa Fé, and the willingness of the Institution and the National Museum to assist in its upbuilding now that its permanence and character is assured.

“The Bureau of American Ethnology has joined with the School of American Ethnology here for researches in the archæology and ethnology of New Mexico. Work under this joint agreement will begin on the Jemez plateau in May and continue until October. By this joint arrangement a much larger amount of work will be accomplished in the southwest than heretofore. The results of the researches will be published by the national government.

“A series of publications have been started for the purpose of making known the results of the work of the School and Museum under the name of *The Papers of the School of American Archæology*. Ten numbers of the papers are already published, and will be ready for distribution within a few days. About ten more papers are almost ready for the press, and will be issued during the year. These papers will be kept on sale at the Museum.

“An expedition starts from Santa Fé this week, for the exploration of ancient ruins in Guatemala and Honduras. This expedition is financed by the St. Louis branch of the Institute.”

WOODEN PORTRAIT STATUE FROM THE CONGO STATE.

—Mr. E. Torday has taken to London 4 portrait statues in wood, the likenesses of former chiefs of the BuShongo nation. Inasmuch as it has been usually thought that the art of portraiture in the round in Africa was confined to ancient Egypt, these finds are very important. The most interesting one dates, according to tradition, from the first decade of the XVII century. The others are from the XVIII century. The wood is extremely hard, with a short grain like that of mahogany, and capable of taking a very high polish. The chief represented in the oldest figure sits cross legged, holding in his left hand the ceremonial weapon carried by adult men, his right hand resting on his knee. He wears a flat cap. Arms and shoulders are decorated with armlets, bangles and bands of cowries. The head is shaved except for a lock on the crown, which is coiled under his cap, and a small lock at the back of the head. Around his waist are two belts, one of the cowries, the other of plaited fiber. This latter is the insignia of a chief; from it a small apron hangs down behind. In front of the figure, is a model of the board for playing mancala, or lela as it is called locally. The statue is a little over a foot and a half high. It is incorrectly proportioned, but is lifelike in spite of that. The face is particularly well done, as are also the ears. The legs are entirely inadequate. The surface

was highly polished with the crimson *tukula*-wood paste, which enhanced the reddish tint of the wood.

This chief, named Shamba Bologongo, is number 93 in the list of kings, beginning with the creation; the present ruler is number 121. Shamba is the great national hero, not a military hero, but a man of peace, a patron of arts and crafts and a political organizer. Before taking the throne, tradition states, he made a long journey into other countries, and brought back tobacco, the art of weaving and the game *lela*. He reorganized the hierarchy of officials through whom the empire was governed, providing for the representation at court of the various trades. His soldiers were instructed to wound only, not to kill.

It is said that he caused his portrait to be carved so that later generations might remember him after his death, and that his people might receive comfort in hours of trial when they gazed upon his statue.



PERFORATORS OF WISCONSIN

The *Wisconsin Archeologist* for April 1909 contains an article by George A. West on *Chipped Flint Perforators of Wisconsin* which is of such interest that it seems well to print an abstract of it.

Perforators were among the earliest tools that man needed and learned to make and use. Probably a thorn or a splinter of wood was the first perforator, followed by a splinter of stone. Then as he came to use flint tipped arrows, he found that they, rotated between the hands made excellent perforators. Later he learned to add sand and water and found that a simple wooden point would hold the sand best. "Thus we find that the evolution of the most primitive drill known to man has resulted in the product of to-day, run by steam or electricity. The main improvement in this tool, being in causing it to revolve more rapidly, for the principle involved remains unchanged."

The awl, probably the most primitive of all perforators, as used in Wisconsin until a recent date, was most frequently made of bone and antler.

The straight shaft drill, twirled between the palms of the hands was the one used exclusively by the nations of this continent at the time of the Spanish invasion. It consisted of a shaft with a rounded point used with sand, or sand and water, and frequently tipped with a solid point of flint or copper.

The fire-stick is similar. The point is inserted in a shallow depression in a piece of dry wood and the shaft rapidly revolved between the hands until the dust ignites. This method was in use in Wisconsin when first visited by white men.

A hollow shaft, made from elder or sumach was also used. A short tube of bone, horn or copper was sometimes attached to a solid shaft and used as a drill point. In this case sand, dry or wet, was a necessary addition. Much less material had to be cut away with such a drill. The object to be perforated was held between the feet or toes.

The forms of flint perforators found in Wisconsin are the same, for the most part, as those found elsewhere in America. The various shapes usually indicate the manner of use rather than the work they were intended to perform. Those with wide, flat bases were evidently for use between the fingers and thumb. Others that are thin and without broad base or notches may have been mounted in handles; still others with notches were evidently intended for attachment to a shaft by means of lashings. The thick points, especially if worn from use, were probably used in drilling stone while the more fragile ones were awls, lances, etching-tools, chisels, gouges, needles, bodkins, fish-hooks, or even arrow and spear points.

A great variety of materials was used in Wisconsin; the most common were flint or chert, jasper, chalcedony, quartzite, porphyry, rhyolite and crystal quartz. The colors, also show much variety.

Among the peculiar forms is one representing a flying bird. Such forms have an expanding, convex tail or base, "with gracefully curved shoulders and barbs, which suddenly contract into a short, slim blade and sharp point resembling the head and outstretched neck of a flying bird. This and some related styles may have been employed as amulets or ornaments."

A common form in Wisconsin is simply a rough flake with one end worked to a sharp point. Occasionally a broad-bladed arrowhead was transformed into a perforator by the secondary chipping of its point.

The awls, bodkins and needles found are either of bone, antler, stone or copper. The bodkin used in sewing, weaving, basketry, making tents, nets, and bark canoes was usually made of antler, bone or wood and provided with a smooth rounded blade, tapering to a sharp point. Such an instrument is still used among the Menomonee Indians of northern Wisconsin in the manufacture of birch bark canoes.

Beads of various materials, perforated teeth, bear claws, wampum, gorgets and pendants were probably perforated with small stone drills, from both sides.

Native copper implements were doubtless employed in various ways. They are classified according to the shape as needles, awls, drills, picks, punches and cylinders. The needles are of the same kind as those commonly in use at present.

Many of the copper implements were provided with handles. A specimen with antler handle $1\frac{1}{8}$ in. long was found near Kenosha, Wisconsin, on the shore of Lake Michigan a few years ago. The exposed part of the copper awl is $1\frac{1}{8}$ in long.

Probably the best examples of drilling in stone by the Wisconsin aborigines are in the stone pipes. Some of the pipe stems show evidence of the use of more than one kind of tool—sometimes as many as 4 were used. In some cases metal drills have been employed.

That the stem hole as well as the bowl cavity, was sometimes started with a stone pointed drill, and bored as far as possible without endangering its brittle blade, is quite certain. The bore was then enlarged by a rimmer or larger drill point; again the smaller drill was used and thus by repeating the process, the bore was carried to the desired length. An unfinished rectangular pipe, of Barron county catlinite in the writer's collection nicely illustrates this manner of making a bowl or stem hole, so far as starting

the bore is concerned. In its partly drilled stem hole was found the fractured tip of a slim stone drill securely wedged fast. The broken bowl lays bare a narrow drill hole, an inch in depth.

Mr. West made some experiments, the results of which he describes as follows:

The writer, with a strong beveled jasper point set into a shaft of about the same weight as an ordinary arrow and revolved between the palms of the hands, was able to drill through an inch of catlinite in 40 minutes. By adding dry, sharp sand, it required but 32 minutes to make a similar bore. It was found that by adding water the cuttings became a paste that adhered to the drill point, retarding its work, and compelling the frequent cleaning of it by scraping. In drilling slate or other stone, excepting catlinite, the addition of water greatly facilitates the work.

With the same drill point, set into a shaft weighing about 10 pounds, and used with dry sand, a hole an inch in depth was drilled into catlinite in 22 minutes. To bore through an inch pine board required exactly 5 minutes, and for an inch of dry maple, less than 16 minutes.

It might be interesting to note that, although the writer drilled 9 holes, each an inch in depth, into a block of catlinite, using the same jasper drill point, without the addition of sand and water, it showed but slight evidence of having been used. In drilling the first hole, the weak, projecting points were broken away, giving it the appearance of having been slightly re-chipped. The grinding and polishing of the drill point, resulting from this rather severe test, was scarcely noticeable. These experiments seem to indicate that many of the so-called perforators that show little or no wear, may have performed considerable service in drilling.

In boring steatite, slate, sandstone or limestone, with a stone point, without water, the drill usually begins to choke up and bind at the depth of about half an inch. By the addition of water, or water and sand, this difficulty is much lessened and the work made easier.

As a sand-stick, the writer tried pine, basswood, maple, ash, hickory and the tip of a cow's horn, filed to the desired size. The pine was found to be too soft, especially, when water was added; hickory so hard that the sand would not sufficiently bed or adhere to it, and maple but slightly better in this respect. Ash proved to be the most durable of the woods, and the horn far superior to any in holding the sharp sand and in retaining its shape.

With an ash rod $\frac{3}{4}$ in. in diameter, 3 ft. long, with a rounded point, and the use of sharp sand, made by crushing quartz crystals between two stones, the writer was able to drill a cone-shaped hole into Barron county catlinite, an inch deep and of the same width at the mouth of the cavity, in 66 minutes. With the horn point, both sand and water being used, a hole of the same dimensions was drilled into this rock in 48 minutes. The bore is necessarily larger than the drill point. If the drill, throughout the operation, could be held without variation from side to side, the hole bored would be the width of the drill plus that of the sand adhering to it; but it is hard to avoid a wobbling motion, which tends still further to enlarge the hole. All holes made with the sand-stick gradually become cone-shaped because of the rapidly wearing away of the shoulders of the drill point.

Catlin saw the Dakota Indians of Minnesota boring their pipe stems with a stick and sharp sand. Copper was almost unknown in the country visited by him.

With a copper awl 5 in. long, set into a shaft 3 ft. long, and with the addition of dry quartz sand, the writer succeeded in drilling a hole 3 in. deep into the end of a piece of catlinite in 55 minutes. This hole was half an inch wide at one end and tapered to a point at the other. It was as cleanly cut and of the same shape as the stem hole of the ordinary Siouan calumet.

By using the same drill in a brace, that it might be more rapidly revolved and be given greater pressure, the same depth was reached in less than 40 minutes. The hotter the drill became through friction, the more rapidly it seemed to cut. It was found that by occasionally roughening the drill, by pounding it with a piece of rock, the sand was allowed to bed and cut with greater rapidity.



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SAMARITAN HIGH PRIEST JACOB, AND THE ANCIENT PENTATEUCH MANU-
 SCRIPT

RECORDS ^{OF} THE PAST

VOL. IX



PART III

BI-MONTHLY

MAY-JUNE 1910



THE SAMARITAN PASSOVER

THIS unique ceremony that is annually observed on Mt. Gerizim by the smallest ancient religious sect is of unusual interest to the Bible student, for it is the only Jewish institution that has come down to us from Mosaic times with its original and elaborate ceremonial, repeated in all its essential outward features, though differing in some minor details.

It was a great disappointment that I was unable to witness this remarkable religious feast on my first visit to Palestine some years ago, and hence in my subsequent travels of three months in the Holy Land, I arranged my itinerary so as to be at Nablus at the time of the Samaritan Passover. On my way from Jerusalem to Jaffa I stopped at Ramleh in order to visit the interesting excavations made by Mr. McAllister at Gezer which have shed much important light upon some dark problems of Old Testament times.

It is a long and tedious day's drive from Jaffa to Nablus some 30 miles to the northeast. The City of Nablus is on the site of ancient Shechem and occupies a central position in the physical geography of Palestine, for the great central plateau extending north and south is here completely broken through by a deep gorge running east and west, with Mt. Ebal on the north and Mt. Gerizim on the south. The location is one of the most beautiful in all Palestine. It is bounded by Ebal and Gerizim the highest of which rises nearly three thousand feet above sea level and eleven hundred feet above the valley. The scenery is strikingly picturesque and the ground

watered by numerous springs and copious streams is attractive with the luxuriant growth of vegetation and a variety of fruits that flourish in this well cultivated garden enclosed by natures' fastnesses.

It is also a place rich in historical associations, for hither came the patriarch Abraham who pitched his tent under the oak of Moreh, and builded an altar unto Jehovah, the first sanctuary raised in the land of Canaan. In the amphitheatre of the valley between Ebal and Gerizim Joshua had the ark of the covenant placed and the law was read to the assembled people who renewed their covenant relations to Jehovah. It was in Shechem that in later years Israel went to make Rehoboam king and he made the city the capital of the northern kingdom. Long before, Jacob had a well dug near the opening of this valley, and this was made still more memorable in later years by the interview of Jesus with the woman of Samaria, who had come hither to draw water.

The city itself possesses no special attractions for the ordinary traveler, for though there is a population of about 25,000 the plain and substantial stone houses are without architectural beauty. Whilst the buildings have the appearance of strength because of their massive material, the location would render it defenseless for warfare. I found little of interest in the streets for the familiar scenes are only a repetition of what we see elsewhere in Palestine. The great Bazar is picturesque with its arched roof, but not of special interest to those who have seen greater ones, and the variety and character of articles offered for sale are regulated by the needs of a plain people. The interior is not the most pleasant place for spending much time for, inasmuch as the sunshine is excluded, it is a gloomy, damp and musty place, and malodorous to such a degree that even their pungent oil of roses does not neutralize it.

The chief object of attraction to the intelligent traveler is the Ghetto, in the southwest quarter of the city, where the members of the smallest distinguished religious sect in the world live in plain houses crowded about their small and severely plain Synagogue, but it is the holy place to every member of the Samaritan community. There is no beautiful portal to their house of worship, and no distinctive architectural design to indicate its purpose. The interior is just as plain as the exterior, with limited dimensions, for it is less than 40 ft. in length and a portion of this at the end facing Gerizim is partitioned off as a recess for enclosing the several manuscripts treasured here and especially that very precious and venerable one, which according to an inherited fiction based upon an interpolation of the transcriber they claim to have been written by Abishua the great grandson of Aaron. The interior of this Synagogue is without any decorations, there being no sculptured columns, no stained windows, no frescoed walls and ceiling, but all covered with a plain and cheap whitewash, a commentary upon the simplicity and poverty of this feeble sect. Hence there is nothing to engage the time and attention of the visitor to this sacred shrine except the famous Samaritan Pentateuch. This has special interest not only as being the sacred canon or writings of this historic sect but it is the most ancient Hebrew manuscript known, for others do not antedate the X century, whilst this was written some centuries earlier at least, although the



PORTION OF THE GREAT COLONNADE ON THE CAPITAL HILL OF SAMARIA

exact age is still uncertain. We saw this on our first visit to Palestine, and again during the celebration of the Passover on Gerizim and hence we shall refer to it later.

I would also mention the great Mosque for it is a building of some interest and worth seeing because of its early history, and the beautiful portal of the façade, for it was once the entrance to a Christian church, dedicated to St. John in the days of the Crusaders. The deep recessed arch rests upon a number of short and slender columns surmounted by capitals but this sculptured door-way is now altogether out of harmony with the present structure. I regret that it is not the only Christian church in Nablus that has been dismantled and converted into a Mohammedan place of worship and such monuments afford sad reflections upon the religious changes that have taken place in the land once hallowed by the sojourn of our Saviour.

The vast population of this secluded city being Mohammedan, the people are bigoted and at times their fanaticism breaks out in such a dangerous degree that travelers are warned to exercise the utmost caution so as to avoid any possible trouble that might arise, and I recall my first visit when the country was in rather an unsettled state owing to the war between Russia and Turkey, and when a great number of refugees were quartered in the immediate vicinity. At that time we were accompanied by a resident missionary in addition to our experienced dragoman, but we did not escape insulting



ANCIENT STAIRWAY, RECENTLY UNCOVERED, LEADING TO THE SUMMIT OF SAMARIA

remarks and the manner of some who crowded us in the narrow streets with sinister looks led our guides to conclude that it was a challenge for serious trouble, and that it was no longer wise nor safe to remain in the City, and we withdrew to our camp outside. I recalled this event when I saw the Mohammedan boys creating a disturbance at the Passover.

The time for us was favorable, for we had just come from that intensely religious atmosphere of divers religious ceremonies in the City of Jerusalem where we had spent three weeks, living in the historic past as we sought out the archæological remains of the ancient city that the excavators have brought to light and during the last week the days were crowded with a variety of observances that claimed to be the objective representation of the teachings and practices of primitive Christianity. We had passed through the various solemn observances of Holy Week, and had seen the large contingent of pilgrims from Spain and Italy, and some thousands of the peasants from Russia, and we had witnessed the religious bathing of several hundred of these Russians in the Jordan. We had also been present at the ceremony of feet washing performed by the Patriarch in front of the Church of the Holy Sepulchre, and we saw that most highly spectacular and fraudulent religious performance of the descent of the Holy Fire, and after these startling and often strange exhibitions of religious devotion and at times of intense frenzy, as in the case of that wonderful exhibition of fanaticism run mad on the annual day of the Mohammedan pilgrimage from Jerusalem to the fictitious tomb of Moses. Hence we were in a measure at least prepared for extraordinary surprises and the most extravagant contrasts in the remarkable Passover that we saw enacted with all its primitive and thrilling realism on Mt. Gerizim.



SAMARITAN ENCAMPMENT ON MOUNT
GERIZIM

THE CAMP AND LAMBS FOR THE
SACRIFICE

We had been assured by those who never saw it that we would be disappointed for they said it would be very much like the sacrifice of the kids that we had seen at the Kalighat in Calcutta, for whether lambs or kids were sacrificed that would not materially affect the character of the ceremony, nor change the impressions made upon the beholder. This is very true, so far as the substitution of different animals in the sacrifice are concerned, but the distinctive character and meaning of the ceremony are so absolutely different in themselves that there is no comparison whatever, and no matter what religious observances we may have seen elsewhere that of the Samaritan Passover is certainly unique, and no serious student of either the old or the new Testament will ever be disappointed in witnessing it on the spot from the beginning to the close. I say "witnessing it on the spot" for I suspect that a few who have written upon it derived their material, or information if not from their inner consciousness, then from other sources than from personal impressions received from having been actual witnesses. I recall an instance that was referred to during my interview with Prof. Harnack in Berlin, who had not witnessed the Passover himself, but who knew of a book in which the writer described the lambs as having been *flayed* instead of *fleeced*, and I suggested that the writer had fleeced the public.

It was on the morning of April 29th, 1904, that we left the town and after paying another visit to Jacob's well at 10:00 a.m. we mounted our horses and made the ascent of Mt. Gerizim by a bridle path winding along the slope by an easy grade and an hour later we had gained the summit. We were at once attracted by the Samaritan encampment of about 40 white tents which occupied somewhat lower ground in a depression of the Mount. We were conducted to the tent of the high priest whose name is Jacob the son of Aaron, a man above the average in height though rather slender in form, but erect, with fair complexion, expressive eyes, a kindly beaming face, a well formed nose, and wearing a full beard streaked with gray, and on the whole having an attractive physiognomy, with a reserved and quiet manner. We were very favorably impressed with the general appearance of

these Samaritan survivors of the ancient race. They have an erect and manly bearing, though humble and without any of the sinister look of the Shylock. They had good features, with expressions of kindness and simplicity, and their complexion is fairer than that of the orientals about them. They did not impress me with having great physical strength, nor as being a hardy people for most of them were slender and some looked as if they were underfed, having a pale face with a thin and prominent nose, although there were some strong and able bodied looking men among them. Most of the men wore a very plain and ordinary dress. The women also were in plain attire and without any bright colors. In fact the head dress of the men was the most picturesque feature for the scarf wound around the red fez was conspicuous at least.

We were also introduced to the other members of the high priest's family, including his wife and sons, the youngest one of whom, boy like, did not subsequently hesitate to solicitate backsheesh. We had a long and interesting conversation with the high priest during the time before the Passover. He told us much about his family, the historic sect and their experiences with the Mohammedans. He also informed us that his successor would be a nephew instead of one of his own sons, according to the Oriental Law of succession. He gave me his photograph which appears on another page.

His tent was very plain as well as all its appointments, for as he told us his people were very poor. Whilst he wore a loose outer dark robe of a purple shade, that distinguished him from the others, the long under garment reaching to his heels was plain and once white, but now faded and made of a very cheap material like cotton, but possibly linen. The faded border of the brownish coat that once marked his position, had evidently seen service and lost its original color, and his head covering was perhaps the most distinctive mark, except the darker material and particular cut of his garment. We observed that he did not wear the phylacteries when reading the sacred scriptures as we had seen practiced by the Jewish readers in their Synagogues in Jerusalem. He told us that the Mohammedan officials in Nablus had refused to send the policemen or military officers to preserve order and protect them against any intrusion during their ceremonies, and they had no redress, for they were few in number, and without political influence and too poor to pay the price necessary to secure the presence of such a safe-guard as an officer of the law, although the subsequent demonstrations on the part of lawless ones showed that it was greatly needed.

We met the high priest on different occasions later in the day when he returned to his tent during the long intervals between the different parts of the Passover, and he was always ready to engage in conversation, and in many ways he made us feel welcome and he gave us abundant assurance that our presence was a real pleasure, and no intrusion. He insisted upon our occupying the best place in the tent and here we ate our noon and evening luncheon, having been urged to remain for this purpose. Our pleasant experiences in this respect were in striking contrast with a writer who states that they were compelled to withdraw to a place some distance

from the camp, in order to eat their luncheon, for to have partaken of food in the vicinity of the camp was forbidden by the Samaritan community, lest some fragment of leavened bread falling upon the ground should render their camp unclean. I rather suspect that some officious guide volunteered this information, for the dreaded ceremonial defilement was wholly imaginary and the precaution evidently unnecessary, for we ate our luncheons with several friends in the very tent of the high priest, whilst engaging in conversation with him and there was no embarrassment nor suggestion as to our leavened bread rendering the camp unclean, for we enjoyed this special hospitality on the personal invitation and urgency of the high priest although his tent was the nearest one to the Tabernacle in which the Passover itself was to take place.

One of the most interesting surprises in store for us in visiting the High Priest in his tent was when he brought forth from its guarded place their most precious treasure, the sacred codex of the Pentateuch, and though it is not so venerable in years as they claim when they tell us it was written by Abishua the great grandson of Aaron, nevertheless it is probable that its origin antedates by some centuries that of any Hebrew manuscript of the Old Testament extant. With feelings of reverence he opened before us this most sacred treasure of their religious inheritance. The roll was enclosed within a cylindrical silver case, embossed with appropriate designs or symbols of their historic faith, including the plan of the ancient tabernacle. This was protected by a richly embroidered crimson satin covering, and when this was removed the silver case was opened by a pair of double hinges and was supported by the three iron rods that served as a tripod, their upper ends being adorned with three large silver knobs. He began slowly to open the sacred parchment which was soiled and discolored by age and much handling, and at places in need of repair. The unknown writer or copyist employed the oldest form of Samaritan letters and the columns were about 7 in. wide with about 70 lines to the column. Whilst they hold the Pentateuch alone as canonical and all the rest of the Old Testament as apocryphal nevertheless they have a profound reverence for the books of Joshua, Judges and Job. In addition to the various readings that occur in all the manuscript copies of the Old Testament, the famous Samaritan Canon has certain remarkable ones that were evidently interpolated to favor their particular sect, for in Deuteronomy xxvii: 4, 5, they have substituted the word Gerizim for Ebal; but most remarkable of all is the lengthy addition which they have made to the Ten Commandments, and which reads as follows:— “And it shall be when the Lord thy God shall bring thee into the Land of the Canaanite, whither thou goest in to possess it, thou shalt set up for thyself great stones, and thou shalt plaster them with lime, and thou shalt write upon these stones all the words of the law, and it shall be when ye pass over Jordan, ye shall set up these stones, which I command you this day, on Mt. Gerizim and thou shalt build there an altar to the Lord thy God, and thou shalt offer upon it sacrifices to the Lord thy God, and thou shalt sacrifice peace-offerings, and thou shalt eat there, and rejoice before the Lord thy God. That mountain is beyond Jordan after the way from the rising of the sun, in the land of the Canaanite,

who dwelleth in the West, over against Gilgal, nearby the oak of Moreh, over against Shechem.”

From the summit of Gerizim we obtain a magnificent view of the country round about, for we can see southwest as far as Jaffa nearly 35 miles away on the shores of the Mediterranean and even further toward Gaza, and though Jerusalem was not in view owing to the intervening country, we could see far beyond. Directly across the narrow valley of Shechem rose Mt. Ebal to the height of nearly 3000 ft. or 300 ft. higher than the summit of Gerizim. The view presented a beautiful landscape and in the foreground of the great plain of Muknah we looked down on Jacob's Well and Joseph's Tomb, and on Askar the site of ancient Sychar, whilst eastward we had an extended view beyond the great depression through which the Jordan plunges on its swift and winding course to the Dead Sea.

The vast ruins that crown the summit of Gerizim do not mark the site of the old Samaritan temple as some have claimed, for the Samaritans hold that it was built over a cave not far away, but many centuries ago was covered with masonry and used as a cistern. Near by is the rocky platform or original altar, and is still the holy of holies to the devout Samaritan who approaches it with reverence, for it possesses for him all the sanctity of a remote tradition of the primitive celebration of the Passover many centuries ago.

The place for the present observance of the feast is about a half a mile away and it is a question why they abandoned the sacred altar. It would seem more natural for them to celebrate the Passover on the site of the ancient temple, and yet they doubtless have a reason for the change, possibly because of the profane intrusion and at times disorderly interference of the Moslems, which might appear like sacrilege if perpetrated on the Holy place that had been hallowed by their remote ancestors, as the place for sacrifice. Possibly too, there may be a reason that grew out of the fact that for a long time they were not allowed to maintain the annual celebration of the Passover on Gerizim, but observed it without ostentation quietly in their homes, and when they renewed it on the Mount they selected a less venerated, and more sheltered place on lower ground.

It is only within the last 70 years or less, in recent times, that they have been able to celebrate their Passover on Gerizim and even now at times their public ceremonies are interfered with in a most disgraceful manner, but they bear the insult with patient forbearance lest any resistance should furnish the coveted excuse for violence and bloodshed on the part of their overbearing Moslem neighbors who so greatly outnumber them. Had the Samaritans dared to interfere in a similar manner with the worship of the fanatical Mohammedans they would have been torn to pieces by an infuriated mob in the name of Mohammed. I felt keenly for the defenseless Samaritans, for it was an outrage to interfere with their feast, merely because they were in a helpless minority, and especially since they are in all respects a peaceful and law abiding people, and they have a right to worship God according to the dictates of their own conscience without being molested and made afraid.

As we arrived a long time before the hour for the Passover, and before the crowd appeared, we improved our opportunity to study the ground and to examine the preparation for the coming feast. We saw them heating the pit or well which was walled around and had been used for many years and into which they threw quantities of coarse grass, weeds and brushwood until it was heated hot as an oven and in this the dressed lambs were to be roasted.

The high priest in answer to my questions informed me that the total number of the Samaritans was about 200, a larger number than that usually given by writers, although we may take the word "about" with some latitude of meaning. However, from the number of tents that I counted, 40 in all, we might conclude that they had provided for as many as 200 persons. Besides a few may have been too feeble from age and sickness to come up from the city to spend the week on the mountain, and whilst I am confident that I did not see as many as 75 persons present at the ceremonies or perhaps not more than 50, yet we must make allowance for the women and the children who with few exceptions remained in the tents. Unfortunately for the future of this small sect the proportion of the males is greatly in excess of the females, and as the Jews have rejected all overtures to inter-marry with them, their future seems somewhat precarious, and yet it is not safe to prophesy as to the extinction of a race, for we must always calculate with that other important factor—the persistancy of a species, especially of the Jewish race, and inasmuch as this particular sect seems to increase rather than diminish in spite of all the continued prophecy against its existence, therefore it is purely speculative to attempt to forecast their immediate extinction, and no doubt another century will still witness them celebrating their Passover.

The present temporary enclosure or so called tabernacle on Mt. Gerizim in which they celebrate the Passover, is open to the heavens and all the ceremonies are exposed to the profane gaze and even intrusion of the disorderly Mohammedan rabble, for it consists of a quadrangle merely enclosed by an uneven wall of rough and loose stone, about 4 ft. high. It was located near the southeast end of the camp and was divided by a low partial wall into two equal portions, and in the one nearest the camp was a trench about 8 ft. in length in which a hot fire was burning and over it hung two large kettles, filled with boiling water to scald the lambs as soon as killed so as to remove the fleece. It was around these cauldrons that the lambs were killed, and just outside the wall, at a distance of a few rods was a heated oven for roasting the lambs. Outside the enclosure and in the direction of the tents were a dozen or less one year old lambs huddled together, preparatory for the sacrifice. These lambs had all been selected from the flock with special care, for according to the ancient law they must be physically perfect, that is without spot or blemish, and outwardly they all seemed to have answered the most rigid requirements for there were no lame or scrawny ones among that select group, and yet there was an imperfect one among them as was subsequently discovered, and it was rejected with a sort of abhorrence as though it were a sacrilege, to present such an offering for sacrifice although the blemish was a very trivial and apparently superficial one.

The entire quadrangle was perhaps 60 ft. long by 20 ft. wide and the farther half was reserved for the more strictly religious services, which consisted in reading from their sacred books, and though this ritual was divided into different courses, several hours at least were occupied at different times in this part of the ceremonies.

It was after the sun had reached the zenith and the noon hour had passed before the high priest left his tent, followed by the men who had assembled, and together they proceeded to their place in the farther part of the enclosure. The high priest knelt on a small rug facing the east and looking toward the site of their ancient Temple, the women and the children also with few exceptions remained in the tent. The high priest with solemn composure raised his eyes and then suddenly began to repeat the sacred account of the institution of the Passover on that memorable night of Israel's departure from Egypt. The members sat and then knelt with faces to the ground, and then arose and stood for a time, suiting the action to the word according to the portions read. They all chanted or repeated from memory with few exceptions and with great rapidity and emotion. Whilst this feature detracted from the dignity and reverence of the occasion, perhaps it was none the less impressive because of the tumultuous haste, inasmuch as it was a constant reminder of the haste and confusion on the night of its original institution.

Whilst the high priest chanted appropriate passages from the Torah, they changed their posture frequently and suddenly from kneeling to standing, and at times gesticulated violently, as if under great mental excitement, stroking their beards or breasts, and drawing their hands over their faces, perhaps in deep reverence at the mention of the name of Jehovah. The high priest alternated his posture at times, but with slow movement.

Whilst they were reciting the historical account with vehement fervor, 7 men entered the space in great haste, dragging the 7 lambs that had been selected for the Passover. They were all left standing together in the corner and so near the high priest that he could have touched the nearest one with his hand. Back of him were grouped about 40 or 50 men, with white robes, but some wore dark overcoats. No doubt the particular number of lambs used would be regulated by the number of people to eat the Passover. Perhaps an hour was taken up in this first part of the ceremonies. When the high priest read: "And the whole assembly of the congregation of the children of Israel shall kill it in the evening:" then all suddenly arose and certain ones seized the Pascal lambs that had hitherto been uninterested observers, some standing and others lying on the ground during all the noise, and unconcerned for they were unconscious of the part they were to play in the ceremonies. But in a moment these innocent lambs were not merely "led," but quickly rushed to the slaughter in the adjoining end of the enclosure, around the cauldrons. They were thrown violently upon their sides and men held them firmly on the ground. In the meantime all had crowded into this quarter, and the curious spectators were crowding them still more, almost to the provocation of violence, for each one was intent upon seeing every feature of the ceremony. During all this time the high priest remained at his place reciting from the Pentateuch. The signal for the bloody sacrifice

to begin was when he read the words from Exodus xii: 5, 6, "Your lamb shall be without blemish, a male a year old: ye shall take it from the sheep or from the goats: and ye shall keep it until the 14th day of the same month: and the whole assembly of the congregation of Israel shall kill it." As these last words were repeated the assistant hurried around that circle and cut the throat of each of the lambs. He drew the knife quickly back and forth several times so as thoroughly to sever the arteries, and the animals soon bled to death without any noise and with little visible struggle.

There was tremendous excitement during all this, because of their excessive haste and the crowding of the spectators, for all wanted the nearest view possible. The scene seemed rather a cruel performance for sensitive nerves and had rather the appearance of a slaughter house, as compared with the essentially spiritual worship of the Christian religion. However, in charity we must recognize the power of religious education which gives each one his own point of view, and which has changed the Christian conceptions of worship from those that prevailed among the Jews at the time of Christ's sojourn upon the earth, when the Apostle Paul himself was one of the most devout and zealous adherents of the same blood ceremonial, and not only entered his vehement protest against any seeming interference with it, but even thought that he did God service in persecuting the followers of Christ. I distinctly recalled the words that Jesus addressed to the woman of Samaria at Jacob's Well: "God is a spirit: and they that worship him must worship in spirit and in truth."

Some writers have given a much more spectacular account of this part of the ceremony, than I have although from my nearness to the high priest nothing of importance even to the smallest detail escaped my observation, and I have given an unembellished description. On this occasion there was no dramatic brandishing or "flashing in the air of 7 knives," but one man with a plain long knife killed the 7 lambs, neither did a youth with a white turban run with a bowl of blood and a bunch of hyssop to the tents, striking the blood in the door of the tents, for the high priest informed us that this striking of the lintels and doors with the blood was observed only with the original celebration; neither did any young men dip their fingers in the blood and put it on the nose, forehead and ears of the boys as some have stated, although such details may have been observed in the past, and I only mention what I saw, for it has no doubt varied somewhat at times, in minor details.

There was much for study and reflection in the strange, rapid, loud and accentuated manner of the worship. They employed tremendous energy in their hurried and tumultuous haste, for everything seemed to have been done in a hurry and under pressure of great excitement. This was true of the entire religious service of chanting and repeating their sacred scriptures with powerful expulsive utterances, and every movement that followed whether the seizing, dragging, and killing of the lambs, the process of scalding them, the removing of the fleece and the right foreleg and entrails, and the violent throwing of these into the fire, spitting the carcasses, and transferring them to the tent, and later dropping them into the hot oven—all was done in haste. I can easily understand why the man who entered

the oven after the lambs had been roasted, to throw them out so that all might eat the Passover did his work as quickly as possible, for the pit had been heated like an oven, and when he came out he looked like a man emerging from a turkish bath. It was not possible for him to endure the heat any longer.

Whilst I could not escape the impression of the unbecoming haste and the decided want of reverent and serious religious solemnity of this celebration of the Passover, yet it was done to represent the haste and history of the original institution and this fact we must keep in view, for I would not impugn their real motives, nor question the genuine sincerity and deep convictions of the worshippers. With them at least it was no mere stage performance, a playing to the spectators for public effect, and they would resent such an implication, just as any Christian Church would repudiate such a charge against the elaborate and gorgeous paraphernalia, extensive ceremonialism and genuflections in its formal worship and why not extend to them the same standard in judging their sincerity? for with them it was their great religious service of the year, the consummation of their worshipful spirit, the killing and eating of the Pascal lambs at the great annual feast of the Passover. However, its striking contrast with the spiritual character of Christian worship, gave new emphasis to the outward ceremonialism of Judaism.

As soon as the lambs had been killed they took large dippers of boiling water from the huge kettles and poured it on them, and at once with great haste the men crowded over them to remove the fleece. Then the hamstrings were slashed and a stick of strong wood was run through and in this position the animal was suspended by the ends of the piece of wood resting upon the shoulders of two men. Then the right shoulder was cut off and the entrails removed and both were cast into the fire and burned. The shoulder was not given to the high priest according to the ancient custom, at least I saw the most of them thrown into the fire as though rejected. The liver was preserved with the heart, and these were later placed within the carcass. Each animal had been carefully examined in the dressing to see that there was no blemish among them. All the lambs had been previously selected with special care so as to fulfill the strict requirement of the law, and no outward defect was apparent. However, each animal was still further carefully scrutinized when dressing it, for the discovery of any physical imperfection would render it unfit for the Passover. The 1st, 2d and 3d were pronounced worthy for the sacrifice, but there was a sudden excitement when the 4th had been subjected to a critical examination, for that revealed a strange natal blemish, a slight imperfection in its organism, lacking one of the *testes*, and after a brief consultation they referred the case to the high priest, who had remained in his quarters at the other end of the tabernacle, reading the appropriate lessons. He came with suppressed emotion but with evident mortification because of the failure in not having detected the unworthy lamb at an earlier stage, instead of its having escaped their discovery until this hour, for they had accepted it through that long religious ceremony and it must now be rejected and another substituted. The high priest carefully referred to the copy of the Pentateuch which he held in his



1. EXAMINING THE PASCAL LAMBS
2. INTENSE EMOTION, SUITING THE ACTION TO THE WORD
3. BEGINNING THE PASSOVER SERVICES, THE SEVEN LAMBS IN FRONT OF THE HIGH PRIEST
4. CROWD ABOUT THE WORSHIPERS AND SEVERAL OF THEIR CHILDREN

hand, and then again examined the carcass in the light of the divine requirement, taking considerable time, for with the sacred canon he was now most deliberate, and then consulted with his associates. I can still see his intent examination and interested look, and keen disappointment and embarrassment because of the absence of that small male member that caused so much trouble, but when the decision was rendered the men seized the lamb as though it had been morally responsible for its slight defect and with looks of indignation they became more demonstrative than ever, as they hurried it away and threw it with fury into the fire, where it was burned, for it had been rejected as unfit for the Passover. I see that picture still in all its vivid realism as though I had witnessed it but yesterday, and it gave me a commentary on the kind of animals that were to be offered for sacrifice, and it produced a deep impression such as I had never realized before. I recalled the scathing rebuke of the prophet Malachi against the people who brought the blind, the lame and the sick animals, "a blemished thing" for sacrifice unto the Lord. As the rejected animal had been thrown into the fire, several men rushed out where a few lambs had been kept in reserve for such a possible but unexpected emergency, and after carefully examining them, so as not to have a repetition of a lamb with a blemish, they dragged another into the enclosure and after the high priest had made a further examination and whilst holding a knife between his teeth, at a given signal the lamb was thrown on its side, and after he had carefully separated the wool at the neck, he himself cut the throat of the victim getting some of the blood stains on his left hand and wrist.

After the lambs had been thoroughly dressed, a slender pole for spitting the animal lengthwise passed through the hamstrings of both hind legs that had been placed across each other and which held them in position, whilst a transverse piece of board fastened to the end next to the head prevented the carcass from slipping off when once transferred to the oven. In the meantime they were carried to the tent near the place of the high priest, having been thoroughly salted within and without and there they remained until the oven was sufficiently heated. Just outside the enclosure on the northeast side was the pit about 4 ft. in diameter and 9 ft. deep which had been heated for some hours. At a given signal and amid great excitement 7 men came from the tent within the Tabernacle each holding aloft the lamb by the pole that had transfixed it. They bore them in haste and the crowd pressed upon them as they approached the pit, and stood around it, holding the lambs over the oven that was to roast them. The director of ceremonies gave the signal and at once all were expected to drop the lambs together into the oven, but in the midst of the haste and excitement, a young man was slow and did not let his go until the others had dropped in and as a result there was some difficulty in crowding his down between the rest. His embarrassment showed his genuine regret for the unintentional failure to act in concert with the other 6, but so serious did it seem to the infuriated master of ceremonies that he was goaded on to fury and he not only upbraided him with violent language but in uncontrolled rage, he used the sharp pole that he held in his hands and made several thrusts with the pointed end at the face of the offender, and left an

ugly scar under his eye. Such a violent exhibition of anger was wholly unjustified by the circumstances and greatly marred the spirit of the occasion for it was not in harmony with such a solemn religious ceremony. In deep humiliation the young man hung his head and bore the pain and public insult in silence, with that meek submission that an underling is expected to show in the Orient. His master should have suppressed his feeling on such an occasion instead of yielding to an outburst of anger. It was unbecoming enough to denounce the young man as he did with a loud and harsh voice, accompanied by violent gestures, but he shocked and filled every one with indignation when he thrust the sharp pike into his face. If he had only given vent to his spleen and struck some of the insulting and crowding Moslems, then there would have been at least the semblance of justification for his violent act, but that would have provoked a riot, and this he was prudent enough to avoid.

I clearly saw it all, for I occupied my commanding position on the low wall of the enclosure throughout the entire ceremonies of the day, making copious notes and using my kodak to the best advantage. I greatly regret that my photos are not as satisfactory as I would like to have them, for the light was not favorable, and the exceedingly rapid movements of the various parts of the ceremony, and the excessive crowding of so many into a small space made it exceedingly difficult to get even the results that I did. The participants always seemed to be impelled with tumultuous haste—recalling at times the rush of a modern college team of foot ball, and such confusion often gave me their backs when I wanted their faces and even obstructed my view of the Pascal lambs that they were dealing with, whilst the Moslem hoodlums plunged pell mell into the hurrying crowd and thus added to the wild disorder that at times put all the best efforts of an amateur photographer out of commission.

As soon as all the lambs had been crowded into the pit a hurdle was dropped over them and then several sacks of green grass were emptied in, the sharp ends of the poles extending through the trellis above the surface. The men and boys collected soil and threw it in until the pit was full, when they took some earth that had been mixed with water to the consistency of clay, and covered the mouth of the oven so as to keep in the heat, rounding the top like a dome, as they plastered it with their bare hands and then wiped them on their garments in true Oriental fashion.

Several hours were necessary to roast the lambs and we anxiously waited for the opening of that oven, for we wanted to see them eat as well as prepare and kill the Passover. Whilst waiting for this supreme moment we gained more information from the high priest. We learned that there were about 40 families of the Samaritans and of course some of the men are unmarried for there are not enough wives to go around as there are more men than women, and the Jewish women refuse to inter-marry with them, although some years ago they made special overtures to persuade them to furnish the needed wives, because of their own limited supply, which seemed to threaten the extinction of their small sect, but all efforts to effect such a reconciliation after so many centuries of national bitterness were ineffectual, and the impassable breach continues.

There was another long religious ceremony conducted by the high priest in which the men united. This continued until nearly sunset, when at a given signal in great haste they went to the oven, and with their hands scratched away the covering of baked earth, removed the grass and hurdle, and then drew out the 7 poles or stakes with the roasted animals or that portion of the meat that still adhered to the skeleton, for the lambs had been so thoroughly roasted that large chunks had fallen off and were in the bottom of the pit. One of the young men jumped in, his head disappearing below the surface and he quickly collected the fragments into a sort of basket. When he came out of the steaming oven he was covered with perspiration and red as a parboiled lobster. All the meat was placed on 7 mat-like baskets and these were borne before the high priest who had occupied his regular station. I counted about 50 persons, all were men except a few boys. They sat in order, squatting on their feet, and arranged before them were 7 large and plain tin platters, about two feet in diameter, heaped up with green herbs and portions of the bitter herbs were rolled in small wads in the unleavened bread, one of which was passed to me. The green herbs had been chopped in small pieces. The folded mats that served for baskets in bearing the roast lamb from the oven were now spread out flat before them, and the savory meat smoked from the heat that had burned it almost black. The unleavened bread was like the thin wafer kind found everywhere in Palestine, resembling our dough after it has been rolled out for the pie, but much darker and only two thirds baked. It is a convenient form for the Oriental table, for it can be torn and rolled into any size and shape and becomes a useful substitute for a fork and spoon in eating from a common dish.

Before they began to eat the Passover the high priest introduced the readings from the sacred records of their fathers and they all joined in chanting with vehement haste, and at times turned their heads about with a significant movement, and their eyes were full of expression as they nodded assent to the statements concerning certain events in their national history, as they were then reciting them. There, all was reënacted before our eyes, and we saw the ancient Jews eating the Passover not merely in imagination from what we once had read but from what we now actually saw, for here in the presence of the high priest we beheld the lineal descendants of the old Jewish race, although with some remote admixture of blood from the Assyrian colonists, prepared to eat the Passover as their fathers ate it several thousand years ago. That was the Jewish Passover that had come down through the centuries from Mosaic times, and in all its essential features was the same that the Israelites had witnessed of old, and I had clear visions of that distant past and the history of these memorable ceremonies which had been preserved to our day and which were now being observed by a small remnant with all the deep fervor of their religious belief. They realized its religious significance and the importance of keeping this Passover, for their souls seemed to have been stirred and hence it was no mere acting, but the outward expression of their deepest conviction. They appeared at least as though they were filled with the spirit of that institution, and all the insults and disturbances of their enemies could not interfere with

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1. NEARING THE MOMENT FOR KILLING THE PASSOVER
2. IN PROFOUND CONTEMPLATION OF THE HISTORIC PASSOVER
3. POURING SCALDING WATER OVER THE SLAIN LAMBS
4. HASTILY REMOVING THE FLEECE

their zealous observance. They were moved with deep emotion, and their highly dramatic action was expressive of their feeling, for they made vigorous and significant signs with their hands, that were full of meaning as they recalled the history of Israel during that memorable night in Egypt. They shook their heads, signalled with their hands, often stroking their beard or chin, bowing their head, passing the open or palm of the hand across the face and then bringing it down violently about the chin as if striking a phantom beard, for a real one was generally absent. All continued chanting for a long time, and I longed for the end to come so that I might see them eat the Passover.

The signs of the approaching end seemed near when there was an unusual outburst of excessively loud and vigorous chanting that had been prolonged for several minutes, and which seemed exhausting, but the climax had not been reached. However, I felt some relief when the chanting ceased and the son of the high priest brought a ewer and basin for his father who washed his hands, and then taking one of the servers gave a piece of the unleavened bread enclosing the bitter herbs to each of the Samaritans. Then all faced the east, the high priest recited alone for the time when the people bowed with their faces to the ground. Then they arose, followed by moments of silence, when they began to chant again, and then prostrated themselves several times as before, sitting at intervals but none ate the morsal of bitter herbs that had been handed to them. Whilst they were generally dressed in white, some wore dark overcoats, and only one man had a towel girt about his loins, and none of the rest had their loins girt about, and all wore shoes. Then the exercises again varied; from sitting, they prostrated themselves, returned to the sitting posture, and toward the close especially there were violent symptoms of strange uncontrolled emotions, and unnatural hysterical jerking in their chanting, with loud expulsive voice, enough to exhaust their physical energies; and all was suggestive of great haste, except the prolonged length of the exercises, for they did not seem to be in any hurry to end them, although we felt that they might have shortened them without sacrificing the general effect. However, my interest was sustained to the last, and I followed the ceremony with unflagging attention, for there was great variety and hence it was not monotonous whilst the rapid movements of the ritual kept the beholders alert for any new feature that might appear, and the intense realism that it gave to this historic institution was a constant source of profound interest.

It gave us most vivid impressions of the ancient Jewish Passover that ceased with the destruction of their temple in the year 70 and which henceforth became obsolete for them, so far as the sacrificial rites were concerned, even though the fact of the institution itself was commemorated by a special brief ritual to keep it in everlasting remembrance, for the outward and elaborate ceremonial that was once inseparable from this memorable feast has been wanting among them since their worship in the temple of Jerusalem ceased, and hence as yearly observed by the Samaritans it is the solitary example of the Mosaic institution that has come down to our times. I was also impressed by way of contrast with the infinite superiority of the new dispensation over the old, for it was a bloody sacrifice, and was lacking in serious reverence and spirituality.



HOLDING THE LAMBS OVER THE OVEN, AND WAITING FOR THE SIGNAL TO
DROP THEM IN UNISON

Only a few had a staff to symbolize the ancient institution, but all sat and none stood whilst eating the Passover, although the same haste that characterized all their ceremonies was not absent from their eating, and no doubt their long abstinence had given them a keen relish for the feast, so that their haste in swallowing the food was wholly unassumed, and they entered upon this last feature of their ceremony with that same strange but to them apparently natural hurry that had marked all the various parts of the Passover celebration.

Never before from all my reading did I receive such vivid impressions of that memorable rite which was instituted on the night of Israel's deliverance from Egyptian bondage, as when I witnessed the celebration on Mt. Gerizim.

When the Jews who returned from the Exile rejected all overtures of the Samaritans to assist in rebuilding their temple, as though they were merely a degenerate race of Cushites, the scornful rejection engendered a feeling of irreconcilable alienation and relentless hatred that often sought occasion to give vent to its injured pride and suppressed revenge. History records various events that show the intensely bitter and deadly feuds that existed between them. The contemporaneous literature shows that the proud Jews had as much disdain for the Samaritans as the haughty Brahman of today has for the Sudra and outcasts of India, and we must make some

allowance if Josephus paints them in dark colors, for his sympathies are naturally with his own people. Of course, the Samaritans as a despised sect did not love the race that heaped contempt upon them, but may have sought occasion to retaliate with equal scorn and hate, as when on the appearance of the new moons they were charged with kindling, in advance, false lights on the summits of signalling stations to deceive and mislead the Jews who were dependent upon signals to enable them to prepare for their religious observances. Or even the more serious and unhallowed desecration of their holy temple that Josephus charges against them may be true, when in the year 6 A.D., availing themselves of the unsettled political state of affairs following the deposition of Archelaus: "the Samaritans became so aggressive that they came privately into Jerusalem by night, when the gates of the temple were opened just after midnight, they entered and scattered dead men's bodies in the cloisters to defile the Temple."

The references to the Samaritans in the New Testament present them in a rather favorable light, and in Christ's healing of the ten lepers he has immortalized the gratitude of the one who felt impelled by gratitude to return and give thanks to his gracious benefactor, and this grateful one was a Samaritan, although it does not necessarily follow that all the other nine were Jews, and that there was not even a Samaritan among them.

On another occasion, Christ brings out in striking contrast the respective moral traits of the Jew and the Samaritan, to the decided advantage of the latter. I refer to the parable of the Good Samaritan, and this marked contrast is even greater when we remember with what aversion the Jew looked upon the Samaritan and even treated him with social ostracism as a despised people. This fact is incidentally emphasized in this interview with the young lawyer who asked Jesus what he should do to inherit eternal life, and who after all that Jesus had told him, "desiring to justify himself," asked, "and who is my neighbor?" Then Jesus illustrated it with the familiar parable, closing with the direct question: "which of these three, thinkest thou, proved neighbor unto him that fell among the robbers? And he said, He that showed mercy." Had it been the *Jew*, he would have said so, with special pride and emphasis on that name which he gloried in, but he avoids the despised name of Samaritan, especially in an honorable connection. It is a forcible illustration of John's statement that "Jews have no dealings with Samaritans." Their scornful contempt for this hated sect may be inferred from that memorable incident in the life of our Saviour, when with uncontrolled rage and withering scorn, they reached the climax of their vocabulary of contemptuous epithets by replying to him: "Say we not well that thou art a *Samaritan*, and hast a demon?"

No doubt the Jews hated Jesus with relentless condemnation, because he recognized the Samaritans as belonging to that one great family of God our heavenly Father, for with their narrow bigotry as the only chosen people, they could not tolerate such a vision of the expansion of God's kingdom. On a previous occasion in the Temple they had shown their disapproval of such religious ideas of the extended brotherhood of man, when he stated that he would depart from them, for they said among themselves: "Whither will this man go that we shall not find him? Will he go unto the Dispersion among the *Greeks* and teach the Greeks?" We may well imagine with what

emphasis they uttered the word: "Greeks," for to include the Gentiles among the chosen people of God, would be intolerable and unpardonable. The proud Pharisees could never brook nor forgive such teachings on the part of Jesus, for even his claims to Messiahship did not arouse their antipathy as much as his contention for the universalism of the Fatherhood of God, instead of restricting it to the narrow limits of Judaism, for in this important respect he did not meet the expectations of the leaders of the Jews, for their Messiah would have special regard for their own people instead of seeking the salvation of the world.

Their narrow vision is clearly and forcibly indicated in that famous Greek inscription now treasured in the National Museum in Constantinople, but which once occupied a place upon the balustrade about the temple,



DRESSING THE LAMBS, THE SAME POLE
USED FOR SPITTING THE CARCASS,
THE TRANSVERSE PIECE TO PREVENT
ITS SLIPPING OFF

FAILURE OF THE ONE TO DROP THE
LAMB IN UNISON

warning every alien or Gentile on pain of death not to enter within the precincts of the favored Jewish race. That monument from the time of Christ remains as a contemporaneous witness to the vast gulf that separated the Jews at the Passover feast from the rest of the world, but Christ broke down the middle wall of partition, for in him "there is no distinction between Jew and Greek: for the same Lord is Lord of all, and is rich unto all that call upon him."

I trust that this brief digression from my observations of the celebration of the ceremonies on Gerizim will not appear to the reader to be wholly

extraneous to my subject, inasmuch as my purpose has been to revive the historic background when the observance of the Passover, both by the Jews and the Samaritans was their great annual feast to the exclusion of alien races, and thereby draw a contrast between the Old and the New Dispensation.

Whilst from a remote period a most bitter feud has existed between the Samaritans and the Hebrew race as a whole, which became intensified when they were forbidden to assist the exiles in rebuilding the temple, and whilst they had been stigmatized as Cushites and denounced for their heterodoxy, they are undoubtedly a Jewish sect, although their distant ancestors did inter-marry with the Assyrian colonists. But the great majority of the Jews of Palestine to-day, and those who claim to be orthodox are the descendants of foreign ancestors and the admixture of ethnic blood in their veins from other nations than that of the Jews, may be even greater than in the case of the Samaritans. At all events their rival co-religionists can lay claim to a longer period for their Passover observance in its fullest outward ceremony than the most orthodox Jews can, for whilst their temple on Gerizim was destroyed by John Hyrcanor 132 B.C., and through long periods of war and persecution their outward observances of the Passover were interrupted, nevertheless through all this time Gerizim continued to be their sacred shrine, and their faith adhered to the Holy Mount and under favorable circumstances they repaired their simple tabernacle and kept the Passover.

Ordinarily this observance begins in the evening just at sunset but occasionally at the noon hour, and then it is practically over soon after sundown or by the time it grows dark, and fortunately this was the convenient time when we witnessed it. When we looked over the tents of that encampment, where a week had been spent in preparation, we pictured to our minds the great annual feast that was celebrated at Jerusalem, for with the historic background of that ancient city and remote times, and with an imagination quickened by the scene before us we could easily behold tens of thousands of the faithful Jews as they came up to their Holy City, not only from the different parts of Palestine, but from the distant countries of Egypt, Asia Minor and far away Babylon to engage in similar solemn services, whilst a million or more dwelt in temporary booths on the slopes of Olivet, and in the public places and in the adjacent villages. The vast numbers of people who could not attend because of distance and other disabilities still longed after Jerusalem, for they were loyal to their faith and craved the blessings of the feast of the Passover, and hence they sent the half shekel to defray the expenses of the temple services. It is true that the City of Jerusalem with its hallowed associations was not there on Gerizim nor the Holy Temple with its high priests and scores of assistants nor the thousands of animals for sacrifice, nor yet the countless number of pilgrims who had come to the feast, for the historian Josephus informs us that according to the results of a census taken during the Governorship of Cestius Gallus it was found that more than two millions were present at a single Passover, for this institution meant everything to the pious Jews and great sacrifices were made in order to attend it. As an illustration of the important place that it had in the hearts of the faithful believer I need but

refer to a familiar event in their history which transpired during the Nabatean siege of Jerusalem 65 B. C. Dr. Geo. Adams Smith in his recent work on Jerusalem in referring to this siege states that "as the nation was divided so also was the city. Aristobulus shut himself up in the Temple Mount with the Priests and probably the chiefs of the Sadducean party. The siege lasted some months. When the Passover came around they begged from their countrymen animals with which to celebrate the feast. After putting an enormous price on each of these and receiving the money, the besiegers treacherously refused to fulfill their engagements." It is not only an example of a gross violation of honor in refusing to deliver the lambs for which the besieged ones had paid an exorbitant sum, but the circumstances connected with their dire necessity and their readiness to submit to the unjust extortion demanded for the animals required for the Passover, rather than not keep the feast, shows the important place that the Passover had in the mind of the Jewish people.

Whilst the Holy Temple at Jerusalem has passed away, and whilst the local surroundings on Gerizim were different, yet we were in the midst of the historical associations, connected with a Samaritan temple that once stood near by us as a rival to that at Jerusalem, and which had been held in sacred memory through many centuries of religious devotion, for whilst the Jews had allowed the original Passover with all its former elaborate ceremonialism to cease with the destruction of their Temple, the Samaritans had preserved that ancient institution, and annually celebrated the feast of the Passover with all the essential and main features as their fathers had observed it. Hence with the important characteristics of this Mosaic institution of the ancient Jews enacted before our eyes, even in minor details, it was not difficult for us in imagination to reproduce the similar scene once witnessed in Jerusalem. For here was the actual observance of that same historic Passover. The high priest and people repeated the very words of that same original institution as their fathers did several thousand years before, and the different parts of that feast were enacted with all their objective realism by the slaying of the lambs, the roasting and eating of the lambs with bitter herbs and unleavened bread, not permitting any important feature of the ritual to be omitted as the Jews do in their quasi-memorial or spiritual observance of it.

That remnant of this most wonderful race still preserves the formal and outward ceremonies in all their essential detail, and according to the strict letter of the law as once did the entire Jewish people several thousand years ago. Nay more—they seem to be fully persuaded from deep religious conviction that in this manner they ought to observe the annual feast of the Passover, and hence they engage in the particular ceremony with all the ardor of their ancient belief, with impassioned enthusiasm, and at times their religious unction rises almost to the pitch of frenzy. On that memorable day my long deferred hope was realized, for there I had seen this remarkable historic rite that Israel of old celebrated with impressive ceremonialism because it was dear to the heart of Israel, and this my eyes had now beheld celebrated in all its important features by this ancient Jewish sect on Mt. Gerizim.

JEREMIAH ZIMMERMAN.

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CENTRAL PART OF CLIFF PALACE AS NOW CLEARED OF DEBRIS. SMALL CROSS ON LEFT HAND SIDE INDICATES LOCATION OF THE CREMATORY

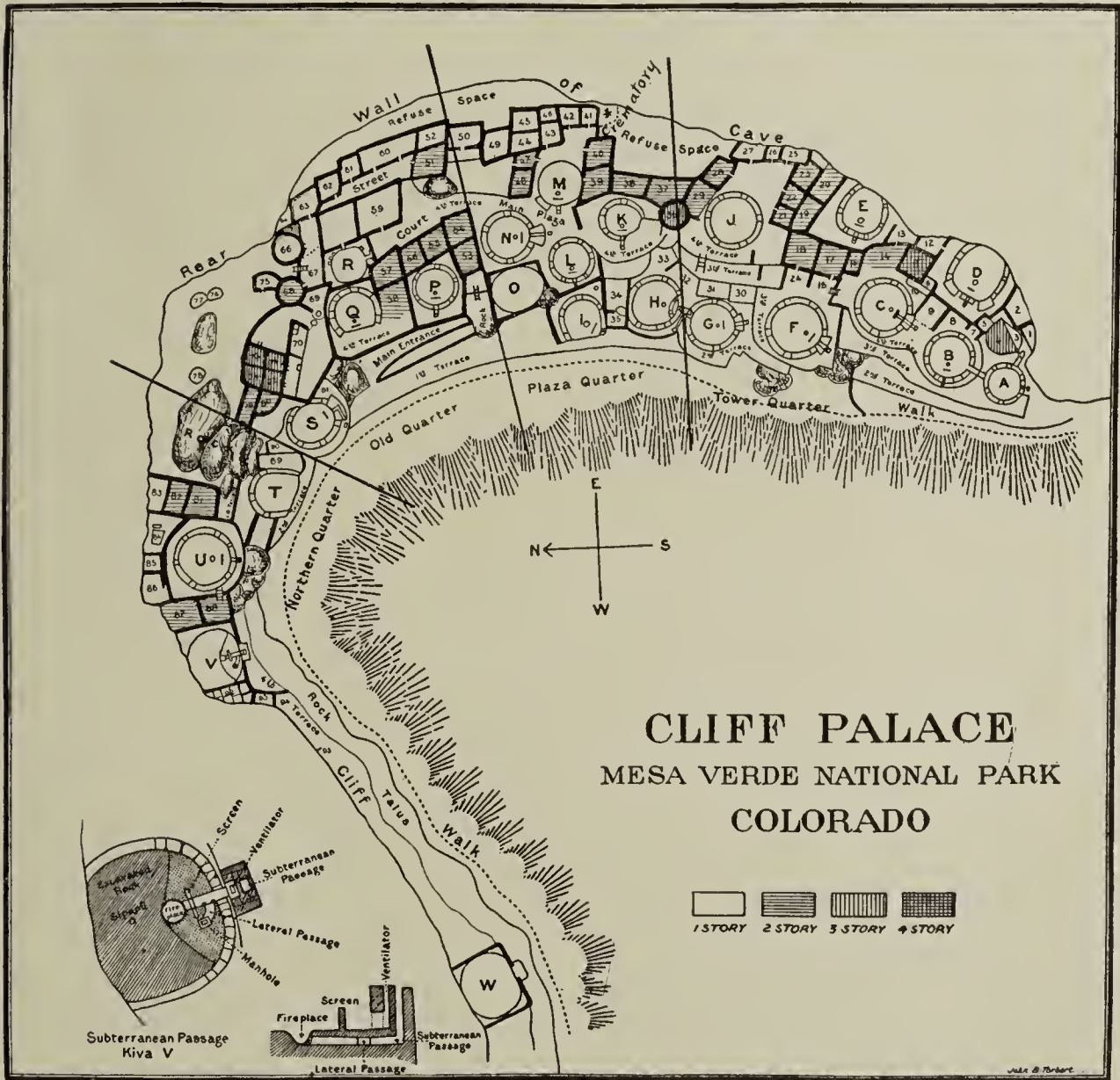
CREMATION IN CLIFF-DWELLINGS

SEVERAL archæologists have commented on the relatively small number of human burials that have been found near the large cliff-dwellings of Colorado and Arizona. Although these buildings have been inhabited many generations, the whole number of human skeletons that have been exhumed from or near them is very small. Contrast this with the multitudes that have been found in smaller ruins like Sikyatki or Homolobi, the cemeteries of which cover an extensive region about the ruin, from the foundations of its outer walls far out in the plain.

I was particularly impressed with this scarcity of human burials while engaged in the reparation of Spruce Tree House and Cliff Palace, the two largest ruins in the Mesa Verde National Park. Repeated search having failed to reveal the cemetery, I concluded that the inhabitants had some way besides inhumation¹ for disposing of their dead. The discovery of calcined human remains in an enclosure behind the rooms revealed the fact that the dead were not always buried, and accounted for the small number of

¹Inhumated human skeletons have also been found in the Mesa Verde, Colorado, region, in caves, rooms of cliff dwellings, or soil on tops of mesas. When desiccated so they become natural mummies, these bodies have the legs drawn to the breast, but in many instances they are extended.

human interments that have been found. It leaves no doubt that the inhabitants of Cliff Palace cremated perhaps the greater number of their dead in special walled enclosures for that purpose, one of which was brought to light by the excavation of the refuse heaps of the cave. This enclosure was found to contain a large quantity of calcined human bones, considerable amount of ashes and several mortuary offerings. The roof of the cave above it was blackened with smoke.



An examination of the refuse heap in the rear of Spruce House also revealed a quantity of bone ashes, but no human bones; the whole roof of the cave being blackened with smoke. Similar evidences of cremation exist in other cliff-houses, where there are like enclosures and refuse heaps situated in the cave behind the houses. But evidence of cremation is not confined to these refuse heaps; it occurs also on the mesa above Cliff Palace where can be traced rude stone enclosures in which occur fragments of calcined human bones accompanied by mortuary offerings.

The existence of cremation² among the inhabitants of the Mesa Verde ruins has been known for many years and was apparently discovered by Mr. John Wetherell. Although it is mentioned by Baron Gustav Nordenskiöld, it seems not to have been verified by later writers, or given the importance it merits. The discovery of cremation among cliff-dwellings is very important in a study of Pueblo culture, for it shows that the custom was wider in its distribution in prehistoric times than at present. Archæological evidences of this method of disposal of the dead have been found at the ruin called by Mr. Cushing, Los Muertos, and at Casas Grandes on the Salt and Gila rivers, in Southern Arizona, and in ruins on the San Pedro. The custom survived into historic times among certain tribes living at the mouth of the Colorado, in California and on the west-coast. It is said that at the time of Coronado the Cibolans cremated their dead, but no archæological evidence that the Zunis burnt their dead can be mentioned and no proof has yet been found that the people who inhabited the Little Colorado ruins practiced this custom: on the other hand it is known that the ancient inhabitants of these ruins inhumated their dead. Although it looks as if this custom was formerly spread over the whole Southwest, the present Pueblos do not burn their dead.

In this connection the existence of underground habitations or pit dwellings should be mentioned. Prehistoric subterranean rooms have been found at Casa Grande, on the San Pedro and in the Luna valley.³ The old caves near Flagstaff, the cavate rooms in the Verde and at the Puye in New Mexico, are artificial underground structures belonging to the most ancient culture of the Southwest. Although in the Southwest subterranean houses have long been abandoned as dwellings, survivals of the habit of excavating rooms underground still persist in certain ceremonial rooms, ordinarily called kivas. Subterranean assembly rooms of both circular and rectangular types were used by Californian tribes, and the custom extended along the West-coast, northward into Alaska.⁴

The custom of cremation found among both the prehistoric and historic peoples of Arizona and the cliff-dwellers of the Mesa Verde was not less widely distributed than that of building habitations underground; both customs indicated that there are cultural likenesses between California and Pueblo tribes and point to the conclusion that the most ancient prehistoric culture of the two regions was not very different. The present Pueblo culture has developed characteristics that may be regarded as autochthonous or modifications due to environment, but it shared much with the early prehistoric culture of the ancients of California and the West-coast.

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² See in Report of the Superintendent of the Mesa Verde National Park, to the Secretary of the Interior, for 1909, "excavation and repair of Cliff Palace."

³ See Dr. Hough, *Bull. Bur. Amer. Eth.*, No. 35. The subterranean rooms at Casa Grande are situated below the foundations of the great surrounding wall of Compound B.

⁴ See E. Sarfert. *Haus und Dorf bei den Eingeborenen Nordamerikas. Archiv. fur Anthropologie.* N. F. Bd. N. 2, 3, pp. 119-215.





SOUTHEAST QUARTER OF MOUND, DURING EXCAVATION; MEN AT WORK UNCOVERING THE STONE FLOOR

THE BOONE MOUND¹

BOONE Mound was located on the southwest quarter of the southwest quarter of Section 26, Township 84 north, Range 27 west of the 5th principal meridian, vicinity of Boone, Boone county, Iowa. It was 500 ft. east of the east bank of the Des Moines river. The east and west longitudinal axis was north, 69° east. The base of the mound was 24 ft., 6 in. above low water in the Des Moines river at this point and 881 ft., above the level of the sea. The apex of the mound was 15 ft., 6 in. above the lowest level of its base. The greatest distance north and south at the base was 130 ft., and east and west 160 ft. It was 14 ft. high and estimated to contain 1500 yards of dirt.

The mound was on an alluvial bottom land about one-half by two miles in area; built on the first or upper flood plain, of which there are three at this place, the first being 12 ft., above the second, and the second 6 ft. above the third. There was a depression around the mound showing where the soil had been gathered to build it.

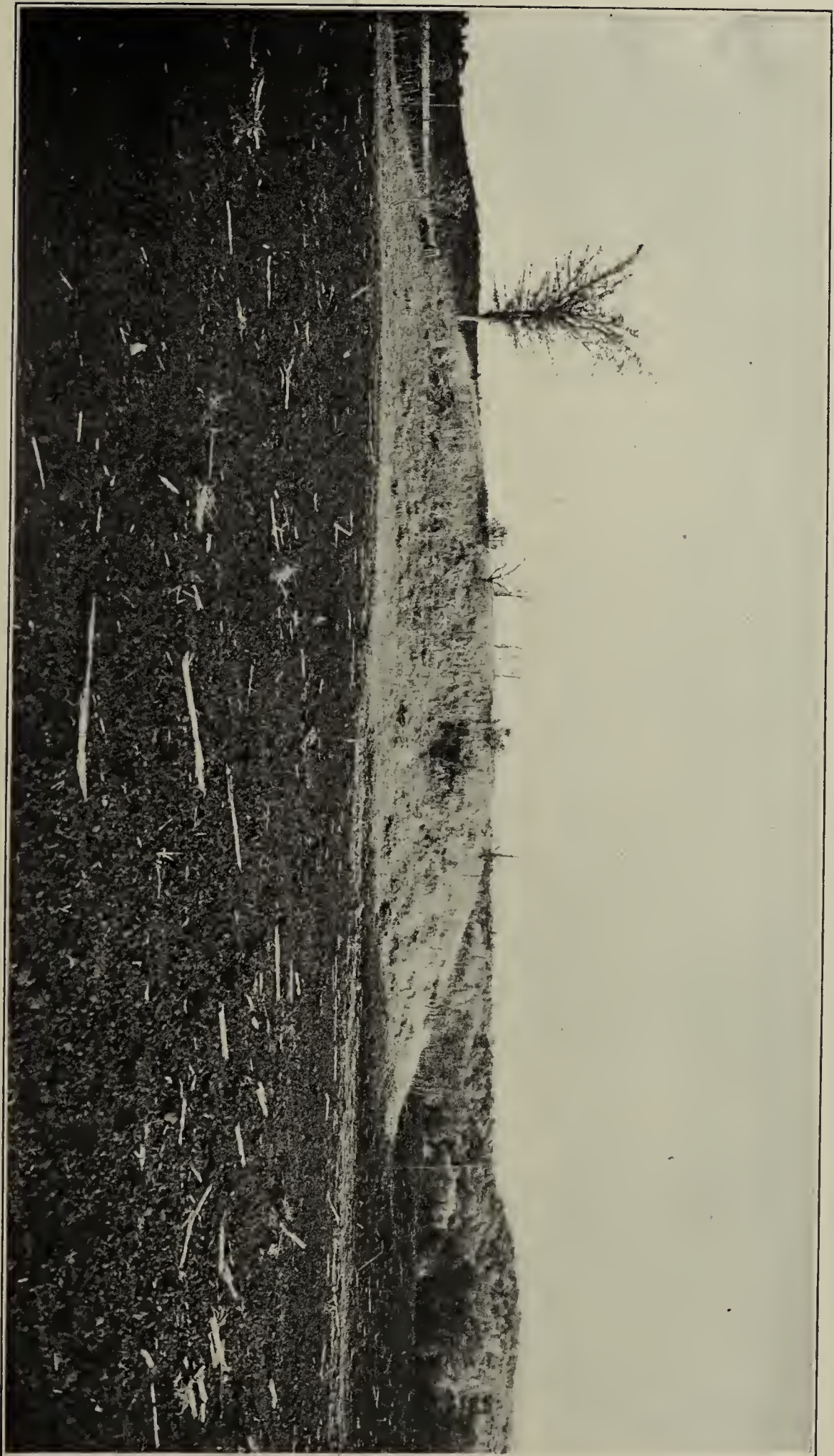
¹This mound was explored by the Historical Department of Iowa under direction of Curators Charles Aldrich and E. R. Harlan, with T. Van Hyning in charge. This article comprises some extracts from the unpublished final report.

The mound was to all appearances preserved in its originality, with the following exceptions: It was covered with a heavy turf of blue grass, some weeds and shrubs, and three stumps of trees each measuring 24 in. in diameter. One was a white elm (*Ulmus Americana*), on the northeast quarter on the 30 foot level; another of the same species on the central south half, on the 36 foot level, and a bur-oak (*Quercus macrocarpa*) near it on the 31 foot level. About 1850 Oliver P. Copher was buried in the top of the mound. Some time during the residence of Samuel Graham and his family on the place, between 1861 and 1870, he made an excavation at the base on the southeast quarter, for the purpose of a fireplace for boiling sugar-water. Roy Ringland, a young man of Boone, set out alone, about 1896, to explore this mound. He made a small excavation about halfway up the central north side, where he threw out probably two or three yards of dirt, and then abandoned the job.

The preliminary surveys of the mound were made in May, 1907, and consisted of, first, several borings reaching below the general level of the adjacent surface to determine the nature of the mound; second, a number of photographs; third, a topographical survey of the mound and a physiological survey of the country surrounding it.

The excavations were begun on April 9, 1908, with 10 men, which number was doubled the second day and continued, with two teams, throughout the work. The excavation was done by placing a row of men with shovels along a section line of the topographical survey; beginning at the edge on a broad side of the mound, cutting down a five-foot slice and throwing the dirt outward, until reaching a little below the bottom of the mound; then proceeding with another section likewise, and throwing the dirt into the excavation last made, and thus proceeding, slice by slice, through the mound. Every workman was instructed to watch closely every shovel of dirt thrown, and the writer and two assistants kept a continuous lookout. A record chart and a note book were kept; and 4 records were made of everything considered worthy. A note was entered in the note book and the article indicated in three positions on the chart; one giving the vertical distance and two the horizontal, one of the latter positioning the article in the length of the mound and the other in the breadth. A number of photographic negatives were made during the work and after.

The mound may be said to have been practically void of artifacts so often found in similar works. There were, however, a few stone implements; a few thousand potsherds (fragments of pottery) and several thousand shells of fresh water mussels (*Unionidæ*), all of which were found scattered throughout the mound from top to bottom, and seemed to have been placed with no special purpose but to have been gathered with the dirt in the building. Potsherds are scattered over the surface of the fields surrounding the mound, which would bear this out. This is not true of the shells, but they would have decayed and disappeared where exposed to the elements. They were generally well preserved in the mound where away from moisture and frost. The potsherds show a great diversity in design of surface ornamentation. The tempering material of the pottery is pulverized stone.



NORTH SIDE OF MOUND; 100 FEET LONG AND 14 FEET HIGH



VIEW OF STONE FLOOR, LOOKING EAST. SHOWS STONE SLABS LEANING AGAINST THE LOGS. THE LITTLE
COLUMNS OR PYRAMIDS ARE OF DIRT, SUPPORTING THE SMALL "BOULDERS"



AFTER THE COMPLETE REMOVAL OF THE MOUND; A VERTICAL VIEW SHOWING
THE OUTLINE OF THE STONE FLOOR

The Boone Mound, however, did not need to depend upon the usual "mound relics" for its distinction; for in the bottom, central portion, it contained remains which make it (so far as the writer has been able to
rn) unique among prehistoric mounds discovered in North America. This consisted of a stone floor, 26 ft. across the greatest measurement, lying on a leveled surface about 18 in. above the general surface of the land. This

floor was irregular in outline, irregularly but closely laid, with irregular limestone slabs brought from a half-mile distance. On top of this floor were logs placed in a rectangular form, about 10 by 14 ft., the logs being about a foot in diameter. Stone slabs were placed against these logs on the outside, forming an enclosure. On top of these logs were placed other logs crosswise, extending from one side to the other. On top of these in turn there appeared to have been a covering of some kind, seemingly of poles and brush, with small stones (glacial boulders) placed on the top to hold it down while the dirt was being placed thereon in building the mound. A small partition was formed in each of the 4 corners of the rectangle, about the size to accommodate a prostrate body, although no skeletons were in them. These were composed of small stones. Lying scattered on the stone floor were many human bones; one entire skull and parts of 4 others, as well as many vertebræ, the large bones of legs and of arms, ribs, teeth, etc. These bones had all been gnawed by rodents (field mouse). Some of the large bones were gnawed away until but a fragment remained. The greater portion of the bones (as well as many of the shells which compare favorably with pleistocene fossils) are seemingly semi-fossilized or mineralized, having a metallic ring. The analysis, however, does not show the bones to contain any appreciable quantity of mineral matter above the ordinary. One skull is a splendid specimen of the artificially flattened forehead.

The logs, it must be stated, were decayed until only vestiges remained; but these were in sufficient evidence to well outline the design.

Stone floors, or platforms, and small enclosures of stones are not unusual over the United States, and some have been found in Iowa, but the writer knows of no record of anything of the magnitude and design of the Boone Mound. They generally consist of a few slabs for a floor, on which bodies were laid, and sometimes a few slabs at a distance over them, or a few rather large ones placed on edge with the tops leaned together over the bodies. Small stone circles are sometimes encountered.

After making a chart of the stone floor, and examining underneath it, etc., it was covered over and the surface left in shape for cultivation.

T. VAN HYNING.

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WORK OF THE SCHOOL OF AMERICAN ARCHAEOLOGY

THE *Bulletin* of the Archæological Institute of America for February, 1910, consists of annual reports and financial statements. The report of Doctor Edgar L. Hewett, the director of the School of American Archæology, gives the general plan of the work of the School and a report on what is already under way. The work is outlined under 3 heads—archæology, ethnology and documentary history, each of which must be carried on with reference to

the facts determined by the others, if sufficiently reliable results are to be obtained. The plan is to have a general base of operations, near an important field of research, where an adequate museum can be developed; and a field base in each culture center to be investigated. The museum is necessary in order to afford opportunity for the study of field results as well as to preserve and display for the benefit of the public the material gathered.

The old Governor's Palace at Santa Fé, New Mexico, affords such a permanent base. It is the oldest government building in America, so in preserving it the School is rendering a valuable service. It is being refitted for the various uses of the School. The museum is to be educational, containing the results of the study of each ancient culture considered in the work of the School. Use will be made of paintings and mural decorations illustrating the environment under which each special culture was evolved. Photographs, sketches, maps, plans and restorations will be used, as well as type collections.

Certain rooms are reserved for administration rooms; others for the accommodation of the photographic work, wood-working department for architectural reconstruction, the linguistic laboratory, and one for a studio for the artist.

The San Juan valley and the Rio Grande valley are the two general regions being investigated at present. During the summer of 1909, work was continued on the Navajo mountain, the last district of the San Juan region to be explored archæologically. The Tsegi-ot-sosi canyon was the center of operations during the first part of the season. Small cliff-houses, ceremonial caves and burial-places were found, yielding valuable collections of "bags of woven yucca and cedar bark containing quantities of grass seed; medicine bags of cotton, human hair, yucca and buckskin; baskets and mats of various styles; feather and fur robes; belts of cotton and yucca woven in colors; sandals of yucca and cotton in great variety, many woven in patterns of beautiful design and color; implements of stone, wood, horn and bone, and some pottery of rather crude texture." Several ruins formerly unknown except to the Navajo were discovered, the most important of which is the cliff-house called Kit-sil (Keet-seel) by the Navajo. It is situated in a branch of the Tsegi canyon, and consists of at least 150 rooms. It is in a good state of preservation. About 10 miles from Kit-sil is a smaller cliff-ruin of about 120 rooms, known as Betatakin. It is in excellent condition and undisturbed. Professor Byron Cummings, of the State University of Utah, has had charge of this work. He also discovered a remarkable natural bridge, known to a few Navajo as "Nonnezhozhi." It lies in the region, difficult of access, between the Navajo mountain and the Colorado river. It is an enormous arch of sandstone, with a span 271 ft. wide. The top of the arch is 301 ft. above the dry stream-bed below. These dimensions place it ahead of all other known natural bridges.

The most important work in the Rio Grande valley during the last season was the beginning of the excavation of the ruins of ancient villages situated at the base of the Puyé cliff, and completely covered by the talus slopes. These ruins, now called Talus Pueblos, constitute a large proportion of the ruined towns of the Rio Grande valley, and their study changes

some of the previous notions of the cliff-dwellings of this region. "The so-called 'cavate lodges' must be considered simply as back rooms of terraced houses built on the ledges against and upon the cliff walls. These talus pueblos are 'true cliff-dwellings' as definitely as are those built in the caverns of the San Juan drainage."

Two of these were excavated at the base of the cliff, just under the great community house of Puyé. Higher up, on the second ledge of the cliff wall, two similar villages were excavated. Three of these have been named, The House of the Wi-i, The House of the Moon Symbol, and The House of the Turkey People, respectively.

At El Rito de los Frijoles, also in the Rio Grande valley, two talus villages, designated as The House of the Sun People, and The House of the Snake People, were excavated. On the face of the cliff above the Sun House were numerous sun symbols, consisting usually of an etching of concentric circles, often painted red. Twenty-eight rooms have been laid bare. When occupied, this house probably had 40 or 50 rooms, all kinds taken together—cave rooms, or those entirely enclosed in the natural rock walls; alcove rooms, or those partly enclosed in cliff walls; and exterior rooms, or those enclosed wholly by masonry walls.

Some rooms have fireplaces, niches and storage alcoves. All, excepting one, are of the usual living-room type. This one room, 8 by 8 ft., was almost subterranean, and has the appearance of having been the clan kiva. Above is an open room containing some ringing stones, which, when struck by a stone of the same kind, give out a clear, metallic sound. These were suspended by strings of deer-skin and were probably used to call the men to the kiva. Above this open room is a living room. Doctor Hewett calls this group of rooms The House of the Priest.

The House or Village of the Snake People was so named from the painting of the great "Plumed Serpent" found on the wall of the kiva of this group. Small etchings of the Plumed Serpent also occur. This kiva is a "cave kiva," having been enclosed entirely within the walls of the cliff. Here again there is a group of rooms adjacent which probably constituted the dwelling of the priest. The row of holes in the floor common to most of the kivas of this region appears here. The holes vary from 3 to 5 in. in diameter and from 6 to 12 in. in depth. There are 6 in a straight line, averaging 12 in. apart—the usual distance. Separated from the row of holes is another hole, in which a post was set. This was always in a "certain position with reference to the ceremonial opening in the kiva wall through which the sun's rays, entering and falling upon the post, produced a shadow which served to mark certain important divisions of time."

Some distance above and to the left of the kiva, was found a cave burial. The body was placed upon the face, with the head to the west, and the knees drawn up against the chest. "The skeleton was almost completely articulated. The body was first wrapped in a white cotton garment, which was probably the dress worn during life. It is of firm texture and excellent weave, and large portions are found in a good state of preservation. The outer wrapping of the body was a robe of otter or beaver fur. . . . The robe was made by first twisting a small rope of yucca

fiber about an eighth of an inch in diameter; then, with the shredded fiber of the eagle or turkey feather, the fur was bound upon the cord, producing a fur rope, about a quarter of an inch in diameter, which was then woven into a robe with very open mesh. It seems probable that this was the customary mode of wrapping the dead, but as the majority of interments were in cemeteries in the open, the wrappings are for the greater part decayed."

The largest cave kiva that has been found is not far from the Snake House. Its size would indicate that it was for tribal rather than clan use. It was decided to restore it as an example of this form of sanctuary. The floor was cleared and vestiges of willow loops set in adobe mortar in the rows of holes were found. Remains of the fire-pit or *sipapu* were uncovered. The work at this point was not concluded.

The most picturesque object thus far studied in the Rito de los Frijoles is the great ceremonial cave at the upper end of the series of ledges. This has been made accessible to visitors by the building of 90 ft. of ladders and the cutting of 200 ft. of trail and stairway in the stone. The kiva in this cave is one of the best preserved and best constructed of the region.

The School has everywhere planned to preserve, first, by excavating buildings or by any other means which will prevent further deterioration; and second, by recovering objects buried in debris and preserving them, either in the building excavated in proper relation to their original environment, or in museums. The idea is not to restore and repair, but to arrest deterioration. Small details are sometimes restored in order to illustrate some special feature, but only after the study of numerous examples, so that it can be done with accuracy. "The dominant idea should be its preservation *as a ruin*, and not its restoration according to the ideas of any one."

Another feature of the work has been making the ruins accessible. Necessary trails have been constructed, stairways made passible and ladders put in place, always, when possible, following the archaic plan of construction and placement.

On behalf of documentary history, Doctor Hewett made a visit to Spain, where he investigated the Spanish archives relative to America. Mr. A. T. Bandelier has in preparation "A Bibliographic Introduction to the Study of the Documentary History of the Rio Grande Valley."

Mr. Sylvanus G. Morley, Fellow in American Archæology, went to Yucatan early in 1909 to study the orientation of Maya temples. He visited Chichen Itza, the largest archæological site in the state, and there secured the orientation of 17 of its buildings. Later he visited Uxmal and made observations on 20 of the principal structures there. He also surveyed an important group of buildings which show a remarkable system of assemblage.

Mr. John P. Harrington has been working on the ethnological branch of the work. He has been studying the Tewa language and mythology from material gathered among the Indians of the San Ildefonso pueblo, the social organization of the Yuma Indians, and other languages.





PLATE I. LUCILLA



ROMAN COINS WITH WOMEN'S HEADS

THE COIFFURE OF ROMAN WOMEN AS SHOWN ON PORTRAIT BUSTS AND STATUES

BEFORE the end of the I century B. C., few portraits representing Roman women were made, but after that time they were much more numerous. With the modes of hair-dressing as found on the portrait statues and busts this paper will be concerned. Although we have meager information as to the styles of coiffure in early Roman days, about the beginning of the Empire the portraits of the court ladies begin to appear upon coins and in statues. If we had the statues alone, there would be much difficulty in classifying, but by comparison with the coins, which preserve not only the portrait but also the name, the marble portraits may easily be classified into periods and often identified. A means of dating is afforded also by the length of the bust, which in the early period of the Empire shows only the head and neck, but increases in length until, in the time of Hadrian, it is extended almost to the waist line. Again, the pupil of the eye is at first not indicated, but at the time of the Flavians it is slightly shown and is developed until a more life-like expression is reached, as shown in plate V, fig. 1, a bust made at the beginning of the III century A. D.

Previous to the days of the Empire the coiffure of Roman ladies seems to have been characterized by great simplicity. The matron dressed her hair into a coil high on her head. This mode was sometimes given the name of *meta* from its resemblance in shape to a boundary stone; it was also called *tutelus*. Later we find the hair parted and combed smoothly back, with sometimes a slight roll above the ear, being formed into a simple knot at the back.

We learn from literature that, in an early period, all elaborations of coiffure were considered as belonging to the foreigner and courtesan. Plautus makes one of his characters, in addressing such a person, say, "Unless you go away from here at once, by heavens, I will tear from your head those carefully arranged, curly, perfumed false locks of yours!" In imperial times, however, the simplicity of an earlier day disappeared. Elegance and

luxury prevailed, and their influence is shown in the coiffure of Roman ladies as well as in everything else pertaining to the mode of living.

In classifying the types, I shall, for convenience, make 8 divisions or periods to which the portrait statues may belong, beginning with the late Republic and ending with the III century A. D., this being the age of greatest interest.

TYPE I. LATE REPUBLIC

Of this period there are coins which bear the names of Fulvia and Octavia, the wives of Marc Antony.¹ In this type the distinguishing features are a narrow puff on the forehead and a braid laid from it over the top of the head and carried down until it joins the knot or coil behind (Pl. II, Fig. 2). The puff was made by pulling out loosely the beginning of the braid, which was made of a portion of the hair parted off on the top of the head and combed forward. The back hair was arranged in several ways: (a) Braided into several braids and twisted so that it projected at a sharp angle with the head, several inches above the neck. (b) Braided and doubled on itself low on the neck in a coil reaching several inches down the back; the ends were brought up and wound around the coil at the neck. (c) Simply coiled low at the back of the head. Sometimes a braid or wavy lock of hair was brought from the coil at the back, just above the ear, passing through the puff at the front and down on the other side to join the coil again (Pl. II, Fig. 2). No attempt was made at elaborate waving or curling. Comparatively few specimens of this type exist, although Ovid evidently refers to this style in the lines,

“Exiguum summum nodum sibi fronte relinqui
Ut pateant aures ora rotunda volunt,”²

“Those with round faces wish a small knot left high on the forehead so that the ears are not covered.”

TYPE II. EARLY EMPIRE

Coming to the time of the early Empire, we find more numerous examples of busts, statues and coins. The coins show Livia, the wife of Augustus; Agrippina the Elder; Drusilla, Julia Livilla and Agrippina the Younger, sisters of Caligula; Messalina, wife of Claudius; Poppaea, wife of Nero; Claudia, daughter of Nero; and Messalina the third wife of Nero. All these women wear the same general style of coiffure, which is quite different from the preceding type. Livia, and possibly Julia Augusti, are represented with both styles, as would be expected. A number of the busts have been identified by comparison with coins, notably Livia and Agrippina.³ (Fig. 2, p. 167).

¹Cohen: *Médailles Impériales*. Vol. i, pp. 51-56.

²*Ars. Amat.*, iii, 139, 140.

³Bernoulli: *Römische Iconographie*. Vol. ii, Taf. v, xv.



PLATE II. ROMAN BUSTS SHOWING VARIETIES OF COIFFURE

In the early Empire style the puff and braid on top of the head disappeared. The hair was parted in the middle, slightly or elaborately waved, and combed down low on the neck. In the most common form of this coiffure, the hair at the back was arranged as (b) in type I (Pl. III, Fig. 1). Occasionally it was arranged as (a) in type I. Rarely we find it coiled in a simple knot low on the neck as in a coin of Livia (Fig. 4, p. 173).

Variations of arrangement of the front hair are as follows: (a) A fringe of curls appears around the edge of the forehead. In identifying some portrait busts of Livia, Mau, in the *Römische Mittheilung*,⁴ detected the presence of a wig, underneath which appears a fringe of curls of the natural hair. (b) The fringe becomes wider, and in the later development of this type we see a wide curled bang, the forerunner of the high, pompadour-like arrangement of the following period (Pl. IV, Fig. 4).

A striking feature, though not always present, is a lock of hair falling forward from the braid or coil and resting on the shoulders (Pl. III, Fig. 3). Sometimes there are two and even three curls on each side.

Of this period, which extended to about 70 A. D., Ovid declared that the acorns of the forest or the wild bees of Hybla could not surpass in number the infinite varieties of coiffure.⁵

⁴Vol. vi, 230.

⁵*Ars. Amat.*, iii, 149-152.

TYPE III. FLAVIAN

Julia, the daughter of Titus, was the imperial lady who set the next style. The coins show Julia Titi; Domitia, the wife of Domitian; and Plotina, the wife of Trajan (Fig. 7, p. 173).

The wide curled bang of the time of Claudius, already noted, is now so arranged as to be raised high and to form a thick, crescent-like frame for the face (Pl. IV, Fig. 1; Pl. II, Fig. 3). This arrangement was known as an *orbis*.⁶ The hair was parted into a wide bang, cut rather long and arranged on the wire frame which gave the *orbis* its shape. The ends of the hair were curled. The greatest care was necessary to keep this *orbis* even in shape, and dire was the punishment which awaited the unhappy slave who misplaced even one curl.⁷

In the back the hair was divided into many parts, braided, and these braids were coiled: (a) in the low, long coil of the two preceding periods, Type I, (b); Type II, (a); (b) in a coil halfway up the head; this coil was sometimes made without braiding the hair.

The locks or curls on the neck, seen in the preceding type, entirely disappeared. Juvenal speaks of this style of coiffure in the following lines:⁸

“Another, trembling on the left, prepares
To open and arrange, the straggling hairs
In ringlets trim: meanwhile the council meet
And first the nurse, a personage discreet,
Late from the toilet to the wheel removed
(The effect of time) yet still of taste approved,
Gives her opinion; then the rest, in course
As age, or practice lends their judgment force;
So warm they grow and so much pains they take,
You'd think her life, or honor, was at stake.
So high they pile her head, such tiers on tiers
With wary hands they pile, that she appears
Andromache before;—and what behind?
A dwarf, a creature of another kind!”

The workmanship on the statues representing this mode of hairdressing is interesting. While the workmen often succeeded in representing with a fair degree of accuracy the parting of the hair and arrangement of the curls, in other cases he simply made the shape of the *orbis* and bored holes in it to indicate the curls (Pl. IV, Fig. 1).

Plotina, the wife of Trajan, while retaining the general style of this type, modified it to some extent (Pl. III, Fig. 4; Fig. 10, p. 167). The hair was still parted, brought forward and supported on the wire frame, but it was no longer cut short. At the front, just over the forehead, the hair was evidently brought together in a knot. The ends then remaining were divided

⁶Mart., ii, 66, 1.

⁷Juv., vi, 490, *seq.*

⁸Sat., vi, 495-507, Gifford's translation.



PLATE III. VARIETIES OF ROMAN COIFFURE



PLATE IV. VARIETIES OF ROMAN COIFFURE

into two parts and wound around a narrow half circlet of metal which fitted on the forehead below the *orbis* and reached to the ears. If there were ends still left, they were curled and left hanging in front of the ears.

TYPE IV. "MATIDIA" TYPE

Matidia, the niece of Trajan, introduced a radical change in her coiffure (Fig. 11, p. 167). The coins show Matidia and Sabina, the wife of Hadrian.

The *orbis* disappeared and in its place was a diadem effect. The circlet of metal with the hair wound around it is still seen, though it is now doubled and even tripled. Back of this were the diadem-like structures. These were quite as elaborate in their way as the *orbis*, many of them being formed of braids plaited in a most intricate fashion (Pl. IV, Fig. 2). There were usually two or more of these diadems, and they were sometimes of metal, not covered by the hair. In the back, the arrangement of the hair was much higher and broader. The hair was braided into several braids and so wound



ROMAN COINS WITH WOMEN'S HEADS

about the head that a large circle was formed by the braids and the crown of the head was not covered. Later developments of this type show this circle so increased in size that there was no room for the diadem, and it disappeared (Pl. II, Fig. 5).

Most of the coins and portrait statues of Sabina, the wife of Hadrian, are perplexing at first sight, so different is their coiffure from any of the formal styles affected by the ladies of the Empire. However, as Sabina is represented with a distinctly Hellenic style of coiffure such as goddesses wear, and as she was deified, it is safe to assume that these are idealized types and not portrayals of her actual everyday coiffure. We have one coin on which she appears with her hair arranged in the mode of the day.

TYPE V. THE "FAUSTINA" TYPE

In representations of Faustina the Elder, whose name I give to this type, greater simplicity is seen. The metal circlet and diadem were no longer used. The hair was parted, slightly waved, combed back, and braided

into 4, 5 or 6 braids on each side, at varying heights. These were brought upward and formed into a long, narrow coil, very high on the head (Pl. V, Figs. 2 and 4). A band was often worn in front of this coil, while a lyre-shaped ornament, evidently formed of the hair, is sometimes seen. Many portrait busts of Faustina are easily recognizable from their resemblance to the coins (Fig. 15, p. 167). The coins also show Domitia Lucilla, wife of Marcus Aurelius.

TYPE VI. THE "LUCILLA" TYPE

Examining the coins, we find in Lucilla, the wife of Lucius Verus, still another type (Fig. 16, p. 167). The coins also show Faustina the Younger, second wife of Marcus Aurelius, and Crispina, the wife of Commodus, with hair dressed in the same manner. Here we find the hair still parted and combed back in soft waves over the ears, but the arrangement in the back was much lower. The hair was usually braided and coiled simply near the base of the head. Often a small braid is found on each side, which divides the waves of hair, about halfway from front to back, and joins the coil behind. The waves of hair were fuller than in the preceding type and give a hint of the padded, wig-like coiffures of the next period (Pl. I). Variations of this type show the hair in loop-like effects, instead of waves in front of the dividing braid (Pl. IV, Fig. 3), and also as formed into a sort of roll extending about halfway back.

TYPE VII. THE "JULIA DOMNA" TYPE

At the end of the II century, coins of Julia Domna, wife of Septimius Severus, show a massive, wig-like coiffure (Fig. 19, p. 173; Pl. V, Fig. 1). Great masses of hair surrounded the face and were combed back to be twisted or braided into a huge flat coil covering the entire back of the head. Naturally, few women had hair enough of their own, and many wigs and much padding must have been used. This is clearly shown both on the coins and the busts. On one bust in the Capitoline Museum in Rome, the marble wig is actually removable (Pl. III, Fig. 2). Whether this was for the sake of realism or to make it possible to change the style of the hairdressing to suit the lady, it is difficult to say.

Such a use of wigs and padding as was resorted to by Julia Domna and her contemporaries aroused the scorn and denunciation of the early Christian writers, notably Tertullian, who says: "Besides which you affix I know not what enormities of subtile and textile perukes. . . . It has been said that no one can add to his own stature. You, however, do add to your weight some kind of rolls or shield bosses to be piled upon your necks!"⁹

TYPE VIII. THE III CENTURY TYPE

Much the same style prevailed as before, except that the mass of hair was lower. It was combed back of the ears, and then fell down upon the shoulders. The flat coil became an intricate 5 or 6 stranded plait which was brought up high on the head (Pl. II, Fig. 4; Fig. 22, p. 173).

⁹*De cult. fem.* ii, 7.



PLATE V. VARIETIES OF ROMAN COIFFURE

A FIXED TYPE

It remains to speak of a type which remained the same during all these periods—the coiffure worn by the Vestal Virgins (Pl. V, Fig. 3). There are many statues and busts of Vestals in existence, and a close examination of their mode of arranging the hair reveals much that is not apparent at the first glance. Viewing the statue or bust from the front, we see a cloth in 6 folds wound about the head, and over this a hood-like drapery. Examining the back, we find that the hair was divided into 6 parts, these being made into 6 braids, 3 on each side. These braids were crossed and so wound about the head that there were 6 braids on top, under the 6 folds of cloth. This cloth, called the *infula* was fastened at the back by the narrower *vitta*, the ends of which are seen falling on the shoulders in front. Over all this was placed the hood-like drapery before mentioned. In early times, the hair of the newly married women was parted into 6 locks with a spear (*hasta*), and the style adopted by the Vestals may be a relic of that custom.

HAIRPINS AND DECORATIONS

It is a curious and inexplicable fact that almost none of the portrait statues give any evidence of the use of hairpins. That they were employed we may conclude from the evident necessity for their use, and we have, besides, some testimony from literature. Dio Cassius tells how Fulvia, the wife of Antony, held the head of Cicero in her lap, while she pierced his tongue with a pin which she drew from her hair.¹⁰ Apuleius speaks of a woman who avenged the death of her husband by putting out the eyes of the murderer with a hairpin.¹¹ Moreover, the pins themselves, made of gold, silver, ivory, jet and bone, have been found in large numbers. One or two wigs have been found with the pins still in place. The pins could hardly have been concealed, as is the modern hairpin, for they did not have a double prong; to be of any use at all, they must, therefore, have projected a little. On some of the pins that have been found, the heads consist of ornaments which are several inches long. One portrait bust exists on which the coiffure, of the type of Matidia, is held in place by a long pin.¹² The writer has seen another, in the Louvre, on which pins are indicated, this being the only one found in the several hundred examined. The pins in this bust are indicated by small projecting knobs. The difficulty of carving so small an object and the danger of breakage are, perhaps, sufficient reasons why no more of them are shown. Similarly, combs¹³ (*pectines*), which are often mentioned in literature, are not represented on the statues.

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¹⁰Dio Cass., xlvii, 8.¹¹Apul., *Metam.*, viii, 13.¹²Daremberg and Saglio, *Dict. des Ant.*: Vol. I, p. 64, Fig. 103.¹³Cf. Poll. v, 96.

O. HAMDY BEY

THE DEATH of Hamdy Bey at Constantinople on February 24, 1910, has removed from the stage one who played a very important part in the development of art and archæology in the Turkish Empire, and one with whom during more than a quarter of a century all archæologists interested in the archæology of the Levant, Asia Minor and Babylonia have had to reckon.

O. Hamdy Bey was by descent a Greek, his grandparents having been slain in the massacre of Scio, in 1822, and his father, then a small boy, carried away to be a slave in Constantinople. Here he won the favor of a well-to-do Turk, was adopted by him, received a European education and ultimately rose to be Grand Vizier, under the name and title of Edhem Pasha, in the empire of his captors.

Edhem Pasha destined his son, Hamdy, for the military service, and, as French influence was at that time dominant in the Orient and French military prestige at its height, sent him to be educated at St. Cyr. But military life was little to Hamdy's taste, and at the end of a year, on his own urgent request, he was permitted to leave St. Cyr and go to Paris to study law in the Sorbonne. Art, however, attracted him more than law, and he privately enrolled himself in the Ecole des Beaux Arts as a student of painting, and when he completed his course of legal study in the Sorbonne, at the same time "exhibited" in the Ecole des Beaux Arts.

Shortly after his return to Constantinople, he published an article on the *Inconsistencies of Judicial Procedure in the Turkish Empire*, which attracted the notice of Ali Pasha, then Grand Vizier, an enemy of his father, who banished him to a minor post at Bagdad. The famous Midhat Pasha was at that time Governor General of Bagdad, and was engaged in attempting to introduce all sorts of European reforms in Mesopotamia and Babylonia. With him Hamdy at once found favor and under him he led for a while a varied and checkered career, now making war on the Arabs in the Nuffar marshes, now conducting excavations at the site of ancient Nineveh, now sketching and painting the country and the people of Haroun-er-Rashid. Two years later Ali Pasha sent him to Bombay as Consul, but, being taken ill on the way, he seized that opportunity to return to Constantinople, whereupon Ali appointed him Secretary of the Legation at St. Petersburg. This appointment Hamdy begged leave to resign, and he was permitted to withdraw into private life, where he began to devote himself wholly to art, painting, among other things, a battle piece representing a scene in the war with the Affech Arabs, in which he had just taken part.

One day, returning from a walk, he found his studio in possession of officials from the palace, who had already removed the great battle scene and were waiting to carry him also to the Sultan's presence. He went in fear and trembling, not knowing whether the summons meant death or banishment. He found the Sultan, Abdul-Aziz, admiring his painting, for which he, Hamdy, was paid by the present of a diamond-set snuffbox and the post of Introducer of Ambassadors.

Shortly afterwards Midhat Pasha was made Grand Vizier, and Hamdy began to play an important rôle in political life. He held various commissions and offices, and, during the Russian War, for a short time saw active service in the army; but his career was unfavorably affected by the fall of his friend and special patron, Midhat Pasha. He came under suspicion, and for his own safety was obliged to retire once more into private life, where he lived for some years under constant police surveillance. In 1881, however, the post of Director of the Imperial Museum at Stamboul became vacant, and he was the only man in the empire at all qualified to fill it. Up to this time the post had been one of little importance and the Museum itself a mere place of collection of antiquities, which were never exhibited, but sold privately from time to time to foreign collectors and museums. To give him a salary sufficient for his needs, Hamdy was at the same time made a member of the mixed Commission of the Public Debt, but it was the position as Director of the Imperial Museum which gave him his opportunity and his fame. He set out to establish a school of art,—painting, sculpture and architecture—on the model of the *Ecole des Beaux Arts* in Paris, and a museum which should be in some degree worthy of the name.

When he became Director, the archæological and art collections, such as there were, were stored in Chinili Kiosk,¹ an old palace on Seraglio Point, in a curious condition of chaos and disorder. Ten years later Hamdy had erected the first of the new modern buildings of the Museum, and set up and exhibited in most creditable fashion, a collection of antiquities containing objects of very great value, among which probably the most interesting and unique was the collection of sarcophagi, largely the result of his own excavations at Sidon in 1887. Being an artist rather than an archæologist, Hamdy had at first wished to decline the appointment of Director of the Museum, but the Sultan had refused to permit this. In accepting the appointment against his own wishes, Hamdy was able to secure certain concessions and conditions, including the promise of the Sultan's financial support and of legislation which would enable him to protect and control excavations in the Turkish Empire and the export of antiquities. This promise was made effective by the enactment into law, shortly after his appointment, of the Greek law of antiquities, practically without change. This very stringent law was not altogether adapted to the conditions of the Turkish Empire, could not be literally enforced and sometimes caused considerable hardship and annoyance to excavators, but to have brought the control of antiquities under a law of some sort was certainly of great importance for the development of the Museum in Constantinople, and to some extent protected the wonderful ruin sites of the empire from ruthless exploitation. It must be admitted that in the latter regard the law and its administration left much to be desired, but perhaps it was the best that could be done under the existing conditions of the empire.

Hamdy had himself had some small experience as an excavator at Nineveh, as already narrated. Two years after his appointment as Director of the Museum, in 1883, he undertook the first official excavations of the Turkish government at the remarkable tumulus of Antiochus of Com-

¹ See illustration RECORDS OF THE PAST, vol. I, p. 293.



HAMDY BEY AND DR. PETERS IN THE FORMER'S GARDEN, CONSTANTINOPLE



LADY DAY AT THE MOSQUE—A PAINTING BY HAMDY BEY

magene on Nimrod Mountain, one of the peaks of the Taurus; but it was his discovery of the wonderful sarcophagi at Sidon and especially the so-called Alexander sarcophagus, 4 years later, in 1887, which achieved him fame as an explorer; and the glorious Greek sarcophagi discovered in that tomb, together with the sarcophagus of the Sidonian King, Tabnith, discovered in a neighboring tomb, constitute to-day the chief treasures of the Museum at Constantinople.

It was art, not archæology, which appealed to Hamdy, however. He loved antiques, not for their antiquity or their history, but for their beauty, and color always appealed to his eye more than form, so that to him the one special charm of the "Alexander" sarcophagus was its coloring. At the time when I knew Hamdy best, his interest in his art school was far greater than that in his Museum, although it is the Museum rather than the art school which has made him famous. He used to take me into the school to watch the students draw and paint and tell me their stories. He loved to describe his struggles in founding the art school, to recount his difficulties obtaining models, and to tell how his wife's feet and hands had served him at the beginning to make the plaster casts from which his students learned to draw. Many hours I spent with him also in his studio in his *Konak* at Courouchesme, watching his work and hearing the story of his art experiences. It was his wife who acted as his model for the Turkish woman who figures in the paintings, several of which were exhibited and purchased in Berlin and Paris. One specimen of his painting, brought to this country, was exhibited in the Chicago Exposition of 1893, and finally purchased by the University of Pennsylvania.

Personally Hamdy was a man most interesting and fascinating, one of the few Turks of rank and position who dared to remain free and independent, through the worst periods of the Hamidian oppression, at the continued risk of his life. A loyal and true friend, those who enjoyed the intimacy of his friendship and of his household learned to love him as a man as well as to admire him as an artist and an organizer, struggling under enormous disadvantages to promote art and science in his native land.

JOHN P. PETERS.

New York City.



PALÆOLITHIC BED BENEATH THE BOULDER CLAY IN SUFFOLK.—“Dr. J. Sinclair read a paper [before the Anthropological Institute] on *The Existence of a Palæolithic Bed beneath the Glacial Boulder Clay in Southwestern Suffolk*. The implements were discovered in a well-sinking at a depth of 100 ft. in a seam of unrolled gravels beneath the blue boulder clay. The finding of these rude implements *in situ* beneath the glacial boulder clays is of considerable importance, as they are evidence of the existence of man on this old land surface probably long before the beginning of the glacial period. In the discussion, although doubt was expressed by some of the speakers as to the artificial character of the implements, the general opinion was that they were of human workmanship.” [London *Athenæum*, 19 Feb. 1910.]

BOOK REVIEWS

THE EARLIEST VERSION OF THE BABYLONIAN DELUGE STORY¹

ANOTHER publication by the University of Pennsylvania, a pamphlet of 70 pages, on the explorations at Nippur, appeared early in March, and, unhappily, the discussion which it has produced regarding the age and biblical value of the tablet considered has assumed a personal aspect which is very unfortunate, both for the archaeological department of the University of Pennsylvania and for the science of archaeology in this country.

The heat of the controversy is over the age, translation and value to Biblical students of the fragment of a tablet describing a flood. Unfortunately for the general public, this tablet was very widely noticed by the press throughout the world before an opportunity was given other Assyriologists to study and pass judgment on the merits of the case. On account of the wide publicity which has been given it, we feel that it is advisable to state both sides of the case quite fully, especially from the point of view of the layman. We desire a fair presentation without personal controversy, as this is the only way in which science is ever advanced.

Before doing so it should be stated that no less than 4 other Babylonian versions of the deluge story are in existence, two in the British Museum, one in Berlin, and one in the Morgan Library, New York, the latter being considered the oldest. All these versions are fragmentary, although the one in the British Museum contains about 200 lines, nearly all of which are complete. This account is wonderfully similar to the biblical account.

The "Deluge Tablet" under discussion is, according to H. V. Hilprecht's statement in the first chapter, a small fragment from one of the boxes of cuneiform tablets collected on the Fourth Expedition to Nippur (p. 1). It measures $2\frac{3}{4}$ in. in greatest width by $2\frac{3}{8}$ in. in greatest length, and $\frac{7}{8}$ of an inch at its greatest thickness. "Originally it was inscribed on two sides, the obverse and reverse, though the one side is now entirely broken away. There are a few characters preserved on the right edge of the fragment." The original tablet Dr. Hilprecht considers as having been probably three times as long as the fragment. It is not dated, but was found intermingled with dated and undated tablets with the lowest of 3 strata of "Tablet Hill" at Nippur (p. 36).

Dr. Hilprecht contends that the tablet was written not later than 2100 B. C. (p. 37), or about 600 years before Moses. The translation is as follows; the parts enclosed in brackets are not found in the text, but are supplied by Dr. Hilprecht "according to the context."

¹ *The Earliest Version of the Babylonian Deluge Story and the Temple Library of Nippur.* By H. V. Hilprecht. (Being Series D, Vol. V, Fasciculus I of the Babylonian Expedition of the University of Pennsylvania. Edited by H. V. Hilprecht). Published by the Department of Archæology with the Eckley Brinton Coxe, Jr. Fund, Philadelphia, 1910.

TRANSLATION

1. "thee,
2. "[the confines of heaven and earth] I will loosen,
3. "[a deluge I will make, and] it shall sweep away all men together;
4. "[but thou seek I] life before the deluge cometh forth;
5. "[For over all living beings], as many as there are, I will bring overthrow, destruction, annihilation.
6. "Build a great ship and
7. "total height shall be its structure.
8. "it shall be a house-boat carrying what has been saved of life.
9. "with a strong deck cover (it).
10. "[The ship] which thou shalt make,
11. "[into it bring the beasts of the field, the birds of heaven,
12. "[and creeping things, two of everything] instead of a number
13. "and the family . . .
14. "and"

Objection is raised to the determination of the age of the tablet from the stratum in which it was found, because of the loose method of recording tablets and other discoveries made during the Fourth Expedition to Nippur. As regards this, it may be well to quote from Dr. Hilprecht's own work issued 7 years ago, *Explorations in Bible Lands during the 19th Century*, page 509:

Haynes unfortunately seemed to have taken no particular interest in the extensive building remains prior to my arrival, or to the precious documents buried within them, beyond saving and counting them as they were gathered day after day. He did not ask Fisher and Gere, who then stood under his direct control as field director, to superintend the excavations in the temple library, nor did he order the different walls and rooms exposed by him to be measured and surveyed. Consequently our knowledge as to how and precisely where the tablets were found is extremely limited. As I must depend almost exclusively on Haynes' official entries and records for this important question, I deem it necessary to submit a specimen of my only written source of information for the time prior to my arrival when most of the tablets were taken out of the ground. I quote literally from his diary:

"January 16th, 1900; 30 sound tablets of promise from a low level in 'Tablet Hill.' Many large fine fragments of tablets, 2 pentagonal prism, $7\frac{3}{4}$ in. long; its five sides from 1 to $2\frac{1}{6}$ in. wide. An hour after dark last evening one of our workmen's huts burned down so quickly that nothing was saved and the occupants barely escaped with their lives. By vigorous efforts the neighboring houses were saved."

I cannot even find out in which section of the large mound he unearthed these particular tablets. Nor is the slightest indication given by him as to whether he worked in a room, or found the tablets in the loose earth, or in both.

Such stratigraphic evidence would not be taken into account in geology, and can hardly be considered as conclusive in archæology; hence the age of this tablet, which Dr. Hilprecht says is undated, must be determined, if that is possible, by its paleography.

The main paleographic argument is based on the use of a certain cuneiform character "*wa*," which he claims is little known on tablets of the Cassite

period in the sense in which it is here used. For this reason he places the age of the tablet very much earlier than the Kassite period (XVIII to XIII centuries B. C.), and not later than 2100 B. C., which is considerably prior to the date of the writing of the biblical story of the deluge. To this view, Professor Albert T. Clay, who has published more plates of text in the University Series than all the other editors of the series on the Babylonian Expedition of the University of Pennsylvania, and so is qualified to speak, takes exception, stating that he has shown that "the sign [*wa*] not only has this value in the Kassite period and in the Amarna letters, but it is also found, besides other inscriptions, in the syllabaries of Assurbanipal's library (668-628 B. C.), where the identical word found in the fragment WA-SI-E is recorded." From the character of the writing he places the age of the tablet within the Kassite period between 1700 and 1200 B. C.

Another argument used by Dr. Hilprecht is the change of *s* to *z*, which he claims points to the early period. Professors Barton and Clay have met this claim by giving many examples of this change of consonants from the tablets of the Kassite period.

At the meeting of the Oriental Society in Baltimore, which, unfortunately, Dr. Hilprecht did not attend, the exceedingly early date claimed for this tablet was discussed by Professor George A. Barton, Professor Paul Haupt, and Professor Albert T. Clay, who were unanimous in their opinion that the tablet belonged to a much later period than that ascribed to it by Dr. Hilprecht.

Foreign scholars have not as yet had an opportunity to examine the fragment itself. However, most of those who accept, without question, Dr. Hilprecht's claim as to the age determined by the stratum from which he states it came, admit that the character of the script in many respects resembles later tablets. In the last issue of the *Expository Times* [Edinburgh], Dr. Theophilus G. Pinches, of England, an authority on this subject, speaks favorably of the tablet, accepting its age as claimed by Dr. Hilprecht on the supposition that it came from a stratum whose age was known to be 2100 or more years B. C. After writing the main article, besides two other reviews, he learned of the uncertainty as to the exact stratum from which the tablet came and added a statement which, being his latest opinion, it seems advisable to quote at some length. Dr. Pinches says in conclusion:

I have not had an opportunity of examining many tablets of the Kassite period at first hand, but two tablets of that dynasty in the Amherst collection offer respectively early and late characteristics (one is dated in the reign of Sagarakti-Surias, about 1330 B. C.). It might therefore be argued that no hard and fast line with regard to the date of the script can be drawn, and that the new Deluge-fragment may belong either to the early Kassite or late Hammurabi period. At least one letter of Burra-Burias (1450 B. C.) is written in a similar style, though the characters are larger and less spread. *From the Script, therefore, I should prefer the latter date for Professor Hilprecht's new fragment.*— [*Expository Times*, May, 1910, pp. 367-368.]

This, it should be stated, coincides with the view of Professors Barton, Haupt and Clay.

In the same paper Dr. Fritz Hommel, of the University of Munich, contributes an article favorable to the conclusions of Dr. Hilprecht. His

article, however, is general and does not mention the character of the script, and accepts without question the age from the stratum in which Dr. Hilprecht claims it was found.

After considering all the evidence it seems to us that any deductions as to the age from stratigraphy cannot be considered conclusive, in view of the lax methods of the Fourth Expedition which uncovered this tablet. Regarding the age as determined by the paleography, we are not able to judge, but there is a difference of opinion in which Dr. Hilprecht seems to be in the minority, with some of the very best authorities on the other side. This leaves the title of the pamphlet, which claims that the fragment is the "earliest," in doubt, for another still earlier is found in the Morgan Library, New York City. Under these conditions it hardly seems advisable to draw broad conclusions from the text or the restorations of this inscription as to the origin of the biblical story of the deluge.

FREDERICK BENNETT WRIGHT.



NARRATIVES OF NEW NETHERLAND²

ANOTHER volume, *Narratives of New Netherland*, has recently been added to the series of *Original Narratives of Early American History*, being reproduced under the auspices of the American Historical Association. This volume covers the entire period of the existence of New Netherland, beginning with accounts of Hudson's third voyage and ending with Peter Stuyvesant's report on the surrender of New Amsterdam to the English in 1664.

While all the narratives, with one exception, have been published before, the work is of great value in reproducing together in chronological order these documents. Many of them were written in Dutch, in which cases former translations have been corrected after comparison with the original manuscripts wherever possible. Such men as Professor William I. Hull, of Swarthmore College, Doctor Johannes de Hullu, of the Dutch National Archives, Professor A. Clinton Crowell, of Brown University, and Mr. A. J. F. van Laer, Archivist of the State of New York, have assisted the editor in revising translations. Each narrative is prefaced by a short biographical note including an account of the circumstances attending the writing of the narrative in question. Footnotes and an index further increase the value of the work.

The one document previously unpublished is a *Description of the Towne of Mannadens, 1661*. It was found among the papers of the Royal Society of London, though how it came there no one knows. Its origin is also unknown. It describes New Amsterdam as seen by the English just before they conquered it. With this description, there is reproduced a map

²*Narratives of New Netherland*. Edited by J. Franklin Jameson, Ph.D., LL.D., Director of the Department of Historical Research in the Carnegie Institution of Washington. Pp. xx, 478, 8vo, 4 maps and facsimile reproductions. \$3.00 net. New York: Charles Scribner's Sons. 1909.

belonging to the British Museum, which may originally have had some connection with it. The map bears the title "A Description of the Towne of Mannados or New Amsterdam as it was in September, 1661."

These various accounts show us the general conditions in the colony and the neighboring Indian territory, as seen through the eyes of sailors, clergymen—both of the Dutch Reformed Church and of the Jesuit order—contemporary historians and men in official positions. An interesting side-light is thrown on the character of some of the settlers by the Reverend Johannes Megapolensis in his *Short Account of the Mohawk Indians* when he says, "The inhabitants of this country are of two kinds:—first, Christians—at least so called; second, Indians."

Some lack of understanding as to the occupations of the colonists seems to have existed in Europe, for van Wassenaer in his *Historisch Verhael* under date of 1626 felt it necessary to state that "Everyone there who fills no public office is busy about his own affairs. Men work there as in Holland; one trades, upwards, southwards and northwards; another builds houses, the third farms. Each farmer has his farmstead on the land purchased by the Company, which also owns the cows; but the milk remains to the profit of the farmer; he sells it to those of the people who receive their wages for work every week. The houses of the Hollanders now stand outside the fort, but when that is completed, they will all repair within, so as to garrison it and be secure from sudden attack."

There is something pathetic in the manner in which the Town Council of New Amsterdam dated their letter to the West India Company announcing the surrender of the city—"Done in Jorck [York] heretofore named Amsterdam in New Netherland Anno 1664 the 16th September."

HELEN M. WRIGHT.



RECENT PUBLICATIONS OF THE UNIVERSITY OF CALIFORNIA IN AMERICAN ARCHAEOLOGY AND ETHNOLOGY³

SEVERAL additional numbers in the series of *Publications in American Archaeology and Ethnology* issued by the University of California have appeared within the last six months. They deal with archaeology in California and the ethnology of certain of the Indian tribes within the state. *Kato Texts*, by Pliny Earle Goddard, presents 37 myths and tales as related to him in 1906 by Bill Ray, one of the 150 survivors of this tribe. The first part of the work is occupied with the tales in the language of the Kato, an Athapascan dialect, with literal translation interlined. At the end of the volume are added free translations of the tales. Considering the small numbers of these Indians, the importance of recording their language and mythology is apparent.

³These include Vol. 5, No. 3, pp. 65-238, Pl. 9, *Kato Texts*. By Pliny Earle Goddard; Vol. 7, No. 4, pp. 309-350, Pl. 32-35, *Shellmounds of the San Francisco Bay Region*. By N. C. Nelson; Vol. 8, No. 6, pp. 271-358, Pls. 21-28, *The Religious Practices of the Diegueño Indians*, by T. T. Waterman; and Vol. 9, No. 1, pp. 1-235, *Yana Texts*. By Edward Sapir, together with *Yana Myths*, collected by Roland B. Dixon.

Shellmounds of the San Francisco Bay Region, by N. C. Nelson records the results of a somewhat detailed survey of the evidences of prehistoric man in the San Francisco bay region, completed in 1908. The author first discusses the adaptation of the region to primitive habitation by reason of its position, physiographical and geological conditions, climate, flora and fauna, and then goes on to the subjects of the distribution, number, size, and nature of the shellmounds and the culture and history of the shellmound people, including their origin, the age of the settlements and the implied population.

The Religious Practices of the Diegueño Indians, by T. T. Waterman, is a study of the customs concerning birth and adolescence, the mourning ceremonies and other ceremonial matters, and the beliefs concerning origin as formerly observed and believed by the Diegueño Indians living in San Diego county, California. These customs are to some extent still practiced, though under the influence of the Roman Catholic Church many have been discontinued during the past 25 years.

The fourth of these publications, *Yana Texts*, by Edward Sapir, together with *Yana Myths*, collected by Roland B. Dixon, contains the text and interlined translation of 24 tales, part of them in the Central Yana dialect, and part in the Northern Yana dialect. Each is followed by a free translation. There are also 13 supplementary myths without the text.



ARCHAIC GLEANINGS⁴

WE HAVE recently received a small booklet of local archæological investigation under the title *Archaic Gleanings, a Study of the Archeology of Nuckolls County, Nebraska*. The real value of the book is greater than its size would indicate. It is important because it is the record of a local observer, Mr. W. Straley, who finds something of archæological interest wherever he chances to be located, and not only finds it, but records it. In 1908 he printed a somewhat similar booklet on archaeological finds in Comanche, Texas, which we noticed in RECORDS OF THE PAST [Vol. vii, pp. 261, 263]. A large number of such observers contributing their discoveries to the state societies as well as their local town papers would greatly advance our knowledge of the early distribution of peoples and civilizations in our country, and would stir up local interest in the subject which is of the greatest importance.

A number of illustrations, both line drawings and half-tones, attest the interest and skill of the author, who is also the illustrator, printer, binder and publisher.

Nuckolls county, Nebraska, lies in the region occupied by the Pawnee tribes when the whites first entered the country, so most of the implements,

⁴*Archaic Gleanings, a Study of the Archeology of Nuckolls County, Nebraska*. By W. Straley, Editor of the Nuckolls County *Herald*, Nelson, Nebraska. Pp. ii, 50, 9 plates. Nelson: The Herald Printery. 1909.

pottery, etc., described are doubtless of their manufacture. The discoveries, many of which are depicted, include arrow and spearheads, knives, flint celts, scrapers, flint spades, arrow-shaft smoothers, grooved stone mauls and fragments of pottery.

Mr. Straley is to be further commended not only for following up every reported discovery in the county, but also for stirring up the interest of the farmers by asking their aid, so that stone mauls, when found, are saved and not used to drive stakes as was the former use of one of these mauls discovered in the county.

FREDERICK BENNETT WRIGHT.

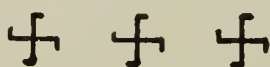


THE JOURNAL OF AN EXPEDITION ACROSS VENEZUELA AND COLOMBIA⁵

VENEZUELA and Colombia, although rich in history, have failed to receive their share of attention by historians according to Dr. Hiram Bingham. Realizing this he made an expedition during the latter part of 1906 and the first half of 1907 across Venezuela and Colombia to study especially the region covered by Bolivar's celebrated march from the vicinity of Achaguas and Mantecal to Bogota in 1819. To accomplish this he took approximately the route followed by Bolivar. This volume is in the form of a journal with three appendices giving a historical sketch of Bolivar's march, the battle of Carabobo and a summary of the weather conditions observed on the trip.

The daily observation of the physiography, people, and animals taken while passing over this historic ground gives an excellent idea of the region through which Bolivar marched and the great difficulties with which he had to contend.

The book is interestingly written, well illustrated and is an addition to our geographical knowledge of this interesting section of South America made famous by Bolivar's remarkable expedition.



EDITORIAL NOTES

DOCTOR MACCURDY TO ATTEND INTERNATIONAL CONGRESS OF AMERICANISTS.—Doctor George Grant MacCurdy, one of our consulting Editors, has been appointed to represent Yale University at the International Congress of Americanists to be held in the City of Mexico, 8 to 14 September, 1910.

WIDESPREAD COMMERCE AMONG THE ABORIGINES IN AMERICA.—In exploring the Seip mound in Ross county, Ohio, alligator

⁵ *The Journal of an Expedition Across Venezuela and Colombia 1906-1907.* An exploration of the route of Bolivar's celebrated march of 1819 and of the Battlefields of Boyaca and Carabobo. By Hiram Bingham, Ph.D., F.R.G.S. Pp. viii, 284. Yale Publishing Association, New Haven, Conn. 1909.

teeth were found, which indicate the extent of the commerce of the aborigines, and the long distances sometimes traveled by them.

CONGRÈS PRÉHISTORIQUE DE FRANCE.—The sixth session of the Congrès Préhistorique de France will be held at Tours from August 21 to 27, inclusive.

DR. CLAY TO GO TO YALE.—Doctor Albert T. Clay, one of our Consulting Editors, leaves the University of Pennsylvania at the end of this term to occupy the chair of Assyriology at Yale. This chair was recently endowed by J. Pierpont Morgan.

RING OF TIME OF RAMESES II.—According to newspaper reports, the Musée Guimet of Paris has recently come into possession of a ring of the time of Rameses II. It is of thick gold, carrying a cornelian stone, rectangular, large and flat. The stone is inclosed in gold and the ring is ornamented with a fillet of gold. The stone bears hieroglyphic characters.

GIFT OF ARCHÆOLOGICAL COLLECTION TO VANDERBILT UNIVERSITY.—According to the New York *Evening Post*, General Gates P. Thurston of Nashville has recently given a valuable archæological collection to the Museum of Vanderbilt University. It includes specimens from a number of southern states as well as Peru. The collection is arranged in a room to be known as the "General G. P. Thurston Room."

ZONA MONUMENTALE AT ROME.—In connection with the semi-centennial celebration in 1911, a Zona Monumentale, or Zona Archæological is to be established in Rome from the Palatine Hill to the Aurelian wall. It is to be 100 yards wide. The space not needed for traffic will be filled with ruins or gardens. The work of demolition necessary has already begun.

ADDITIONS TO THE MUSEUM OF YALE UNIVERSITY.—During 1909 the Peabody Museum of Yale University was enriched by the gift of two cases of prehistoric implements in stone, iron, horn and bronze from Dr. Paul Vouga, of the Museum of Neuchâtel, Switzerland. By exchange they have received from Stockholm an ethnographic collection made among the African tribes of the Congo. The Egypt Exploration Fund has sent them a collection from the tombs at Mahasna and Abydos, including articles in ivory, vases, beads, ornaments, palettes and pottery.

"THE MAIDEN OF ANZIO."—Professor Strong, an English lady, is reported as holding that the marble statue called the "Maiden of Anzio," which was discovered after a land slide in 1878, is not Cassandra, but is more akin to the later statues of Dionysus and Apollo. She thinks the figure more muscular than the Greeks were in the habit of representing women. She goes on to suggest that the figure in its long, draped tunic represents a Gaulish priest who sacrificed to Cybele, and whose statues have been mistaken for women before. The Italian government bought the statue two years ago, and had it set up in a corner of the Museo delle Terme last October.

PROFESSOR WRIGHT RE-ELECTED PRESIDENT OF OHIO ARCHÆOLOGICAL SOCIETY.—At the recent annual meeting of the Ohio State Archæological and Historical Society, Professor G. Frederick Wright was re-elected president. The Society has this year the largest appropriation for field work that it has ever had. The officers are hoping for a building another year. As the museum is growing rapidly, a proper home for it is almost a necessity.

ARCHÆOLOGICAL COLLECTIONS FROM MANHATTAN AND STATEN ISLANDS.—The department of anthropology of the American Museum of Natural History has recently acquired two large collections of local relics. One was made on Manhattan Island by Messrs. Calver and Bolton. It is of special value since the sites on the upper end of the island are fast becoming obliterated. The collection includes several interesting skeletons and a large, perfect pottery vessel of the Iroquois type. The other collection was made on Staten Island during the years 1900-1909 by Mr. Alanson Skinner, and contains nearly 1,200 specimens.

CONGRÈS INTERNATIONAL DE NUMISMATIQUE ET DE L'ART DE LA MÉDAILLE.—From 26-29 June, 1910, there will be held at Brussels, Belgium, an International Congress of Numismatics and the Art of the Medal. In connection with it there will be an international saloon of contemporary medals, to which the principal *médailleurs* of the world have contributed. For further information, address M. A. deWitte, President of the Belgian Commission of Organization, 55 rue du Trône, Bruxelles, Belgique. This is the first international congress which has considered the art of the contemporary medal.

CHANGE IN THE TRANSLATION OF THE KENSINGTON RUNE STONE.—Mr. Hjalmar Rued Holand, who made the original translation of the Kensington Rune Stone, states in an article in the *Journal of American History* for the second quarter (1910) that the number of days in the inscription on the edge of the stone should be translated "41" instead of "14." His corrected reading would then be: "We have 10 men by the sea to look after our vessel, 41 days' journey from this island. Year 1362." This corrected translation will remove one of the objections which many have raised as to the genuineness of the inscription. [See RECORDS OF THE PAST, Jan-Feb. issue 1910.]

MR. WILLIAM H. HOLMES BECOMES HEAD CURATOR OF ANTHROPOLOGY IN THE NATIONAL MUSEUM.—With the beginning of 1910, Mr. William H. Holmes gave up his position with the Bureau of American Ethnology, Smithsonian Institution, to take the place of head curator of anthropology in the National Museum and curator of the National Gallery of Art. Mr. Holmes prefers museum work, especially as the change will afford opportunity for completing the preparation for publication of the results of his former archæological researches. Mr. F. W. Hodge succeeded him in the Bureau of American Ethnology, under the official designation of ethnologist-in-charge.

STONE CIST IN SCOTLAND.—At a recent meeting of the Society of Antiquaries of Scotland, Mr. J. W. Cursiter reported on the discovery of a stone cist near Crantit, near Kirkwall. In construction it is much like one found at Newbigging, in the same neighborhood, in 1855, having an empty upper cist above the cover of the lower cist, where the burial took place.

ARCHÆOLOGICAL MAP OF OHIO.—The Ohio Archæological and Historical Society is preparing an archæological atlas of Ohio. Professor W. C. Mills, the Curator of the Society, has charge of the work. This is a unique undertaking, which will be of great value. The maps of the United States topographical survey are made the basis of the plates. Each of the 88 counties is to have a separate map. The uniform scale of half an inch to the mile will be used. Work was begun in the northeastern part of the state, and a number of counties have been worked up already. It will take a number of months yet for the completion of the atlas. The Miami, Scioto and Muskingum valleys are richest in archæological treasures, and therefore involve most labor.

DEATH OF PROFESSOR FRAIPONT.—Professor Julien Fraipont, of the University of Liège, Belgium, died on March 22, 1910, at the age of 53 years. At the time of his decease he was rector of the University and professor of animal geography and paleontology. Author of many papers on zoölogy, paleontology and anthropology, and a member of many learned societies, including the Royal Academy of Belgium, Dr. Fraipont was perhaps best known for his work (joint author with Professor Max Lohest) on the fossil race of Spy, entitled: *La race humaine de Néanderthal ou de Canstadt en Belgique. Recherches ethnographiques sur des ossements humains découverts dans des dépôts quaternaires d'une grotte à Spy et détermination de leur âge géologique.* Pp. 155, 8° Gand, 1887.

RECORDS OF WISCONSIN ANTIQUITIES.—The *Wisconsin Archeologist* for October-December, 1909, contains a list of additions to the records of Wisconsin antiquities. Two hundred separate items were added to the records during 1908 and 1909, including 82 village, camp and workshop sites; 10 cornfields; 8 plots of garden beds; 7 cemeteries and burial places; 8 caches; 3 quarries; 110 groups of mounds and single mounds. The researches were undertaken and reported by members of the Wisconsin Archeological Society, at their own expense. Known sites have also been resurveyed and corrections made. A large part of the state yet remains to be surveyed. The northern counties are sparsely settled, and it is clear that the Society must have funds for carrying on the work, so that they will not have to depend wholly upon volunteer work—a permanent fund or help from the state is needed.

ARCHÆOLOGICAL RECONNAISSANCE OF THE NORTH PACIFIC COAST.—During July, August and September, 1909, Harlan I. Smith, of the American Museum of Natural History, made a hasty

archæological reconnaissance of the North Pacific coast between Seattle and Skagway in order to locate sites for future work north of the region previously examined.

At Old Metlakatla, near Prince Rupert, a number of shell-heaps were found. Some petroglyphs on the rocks in the talus slope of the shell-heap appear at about the high-tide mark at Metlakatla. One heap showed, on the summit, broken human bones as well as fish and other animal bones, mixed with clam and various other shells. Mr. Smith reports other shell-heaps as well as a kitchen-midden a few miles above Kincolith.

North of Wrangel, Alaska, a number of petroglyphs were found on fragments of beach rock along the beach below the high-water mark. "A few of them consist of two concentric circles, others apparently were designed to represent the human face, and some of these tend to be square rather than circular. One apparently represents the finback whale. The plainest of the grooves probably do not exceed a quarter of an inch in depth; others are shallower, or the surface of the rock is weathered away so that they can scarcely be seen." The type of art seems to be characteristic of this region.

MAIL DELIVERY IN ANCIENT EGYPT—"Translations recently published of some of the latest papyri found in Egypt lead us, according to *Corriere della Sera*, precisely into an office where letters were registered more than 2,000 years ago.

"Among other things found was a statement of account, later used in wrapping a mummy belonging to the time of Ptolemæus Philadelphus. On the back of this papyrus, the front being occupied by entries made by the bookkeeper of a great estate in relation to receipts and distribution of wheat and barley, this statement is followed by a postal diary, which certainly was kept quite irregularly.

"The diary begins with the 16th and ends with the 23d of a month not named, and mentions the arrival and a further travel of letters forwarded from a local postoffice. An entry says:

"'On the 21st day of the month, at the fifth hour, the postal rider escorting the mail from the south delivered to the postal clerk, Phantias, at this station, two letters. These letters were later delivered by assistant postmaster Horos to the postal rider Nikodemos, who departed with them for the north.'

"This papyrus relates also that the chief officials of the local post-office, which was perhaps in the neighborhood of Ptolemais, were the two brothers Phœnix, who were known also under the sobriquet of 'hundred-acre men'; that is, they were colonists of the really prosperous class. The service they were rendering in the post-office was an office of honor that had been conferred on them.

"That a salary was allotted to Phantias, the postal clerk, is one of the entries of the diary, but the amount of it is not mentioned, and that the diary was written on a papyrus, of which the far greater part had already been used, shows that the brothers had proposed to conduct their office economically." [*Scientific American Supplement.*]



TERRA COTTA HEADS, WHISTLES AND POTTERY FROM THE CHAMELECON AND OLOA RIVER VALLEYS

From Blackiston's Collection in Smithsonian Institute.

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ARCHAEOLOGICAL INVESTIGATIONS IN HONDURAS

THE valleys of the Chamelecon and Oloa Rivers, the largest streams in Honduras, contain many interesting remains of past civilizations. On the Chamelecon are located the ruins of ancient Naco described in another article, which was at the time of the Conquest a flourishing city of many thousand inhabitants, while near San Pedro Sula there are numbers of mounds of interesting construction, occurring in groups and even singly.

The writer excavated in several of the latter upon the *fincas* of the American Consul, Dr. Mitchell, to whose interest and courtesy he is greatly indebted. They consisted solely of mortuary mounds, usually rising about 7 to 10 ft. above the plane of the surrounding valley, and were in most cases encircled by walls of stone, which in turn had slight masses of earth in front of them and are often used as impromptu quarries by the natives of to-day.

One of this description, measuring 58 ft. in width by 91 in length, was opened by means of a cut 5 ft. wide to the center of the mound and then a T drift on either side. The outer wall was composed of medium-sized, irregular blocks of stone brought from the distant river bed, and varied in thickness from one to two and a half feet. Here and there throughout the mound were encountered masses of burnt clay and one or two small culture symbols of slight importance, as obsidian flakes, broken clay whistles, etc. No bones, *ollas*, nor any building lines whatever were found. Unfortunately, the principal item of interest was a cave-in which carried a large mass of

earth,—on the top of which the writer was complacently sitting,—upon the laborers in the cut 8 to 9 ft. below; tools, men and earth were thrown into one heaving mass. Fortunately, no one was injured, though some probably were unduly startled.

About 200 ft. northwest another mound, 55 ft. in diameter, with practically no stone in it whatever, was excavated without any better results. However, one near-by, had a short time before been found to be particularly rich; the usual stone wall was penetrated, and in the center of the mound a vaulting of cleverly fitted rocks was encountered, which it took much skill to finally dislodge. When this was eventually accomplished, several jars, about one and a half to two feet high and one foot in diameter, were discovered, in which were a large number of cleverly carved stone objects—including a highly polished green mask of a decidedly negroid type and excellent finish; beads of jade and clay; a small face with a very peculiar treatment of the beard and an acquiline nose; a large bizarre stone figure in a sitting posture, and a few other pieces.



TERRA COTTA SEAL FROM PLAYAS DE LOS MUERTOS

About 5 miles from San Pedro Sula there is a group of 8 mounds arranged in a circle 115 ft. in diameter, the inner diameter of which is 44 ft. and the average height about 8 ft. The writer worked upon one of these, measuring 40 ft. across, for several days with a large force of men. In the case of this mound the stone wall, which in most instances rose to a height of 3 or 4 ft. only, was continued so as to completely cover the entire mass, and on the sides was of great thickness. A number of mortuary remains were found here—broken pottery of a high type, numerous portions of human bones, which crumbled to pieces when exposed to the air, and which always occurred in a thin dark stratum of earth, obsidian knives and scrapers, and a terra cotta whistle. The pottery was also located in strata and usually in proximity to the human remains.

From all indications the age of these mounds is great; they in many cases show much wear, and a plain rise in the floor of the valley and the water



PLAYAS DE LOS MUERTOS OF THE CHAMELECON

level is indicated since their construction, probably brought about in the course of time by the downpours of the rainy season and the consequent eroding of the surrounding hills.

But perhaps the most interesting remains in this section are those of the Playas de los Muertos, or "Shores of the Dead," on the Chamelecon and the Oloa rivers. In the latter case, by far the better known, they extend irregularly over a distance of several miles from Santa Ana to Santiago, being sections of the river's banks where the stream has apparently passed through ancient burial grounds. Human bones, mingled with stone images, pottery, whistles, and many other culture symbols, project from the banks often as far as 20 ft. below the surface and frequently below the present average water level.

The writer examined 3 of these playas, and conducted excavations in the most prominent one near San Miguel, not under the most inviting circumstances, however, as he had to sleep in a room with 8 men and 4 women not including other members of the domestic retinue, such as hens, hogs, dogs, etc., during the time operations were in progress. A huge alligator that made frequent excursions around the hut after any stray pig left outside was, however, temporarily barred.

Two skulls were found, both facing the west, and each from 15 to 18 ft. below the surface, and in a very poor state of preservation. Despite the fact that a calcareous mass had formed over one, the back portion of the

head was crushed in. Both were apparently dolichocephalic, comparatively small and with a fair facial angle. A deer skull was also found near by.

Whistles of baked clay abounded, and were fashioned very cleverly into many animal and other fanciful shapes. In the writer's collection are specimens representing the human bust with one hand placed on the head, the elbow being used as a mouthpiece; a seated monkey with a number of stops for varied notes; an otter with a loose ball inside to give numerous variations; an alligator's head upon a log and many other similar forms.

The *ollas* found in these *playas* are of many sizes and range from the common rough *olla* for culinary purposes to the finely finished and decorated one of yellow ware carefully l avigated of all d egraissant, and covered with striking symbols and figures of Mayan type. Effigy vases are also found, but are usually undecorated, though at times they contain incised patterns upon



EXCAVATION IN MORTUARY MOUND, VALLEY OF THE CHAMELECON

their surfaces. It is, however, but comparatively rarely that an entire specimen is discovered, as there seems to be a far greater amount of broken pottery here than is usually encountered. Whether this condition is owing to the frequent seismic shocks or to the immediate presence of water, it is difficult to state, though the fact that in many cases the pieces seem to have been forcibly broken and flattened tends to substantiate the former hypothesis. The stone objects, however, fare much better, but these are usually limited to idols, human heads, small jade axes of excellent finish, ranging from one to two inches in length, and weapons, though the writer has in his possession a portion of what seems to have been a stone *olla*. One of the carved heads taken from these burial grounds is of a perfect negroid type, the thick lips, flat up-turned nose and kinky hair all being clearly represented.



PLAYAS DE LOS MUERTOS OF THE OLOA, NEAR SAN MIGUEL, HONDURAS



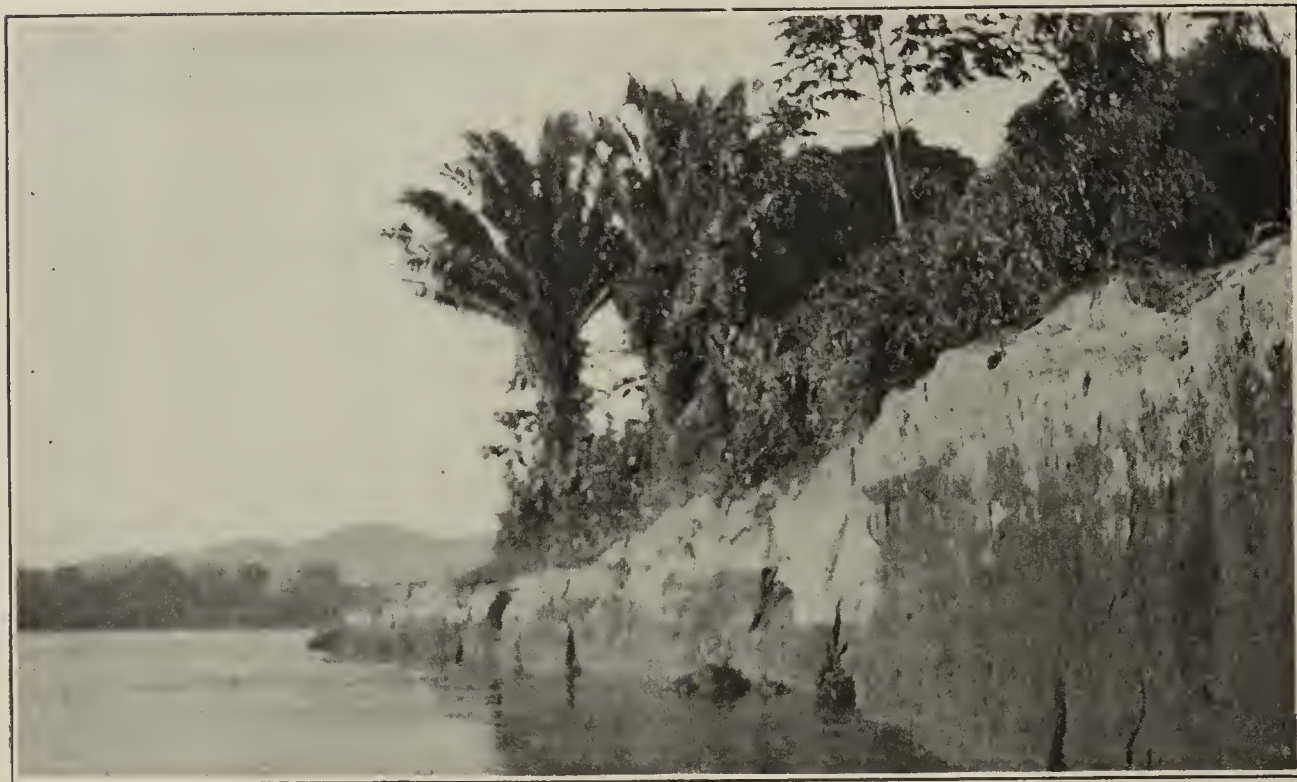
VALLEY OF THE CHAMELECON, HONDURAS



MOUND NEAR SAN PEDRO SULA, HONDURAS



ANOTHER MOUND NEAR SAN PEDRO SULA, HONDURAS



PLAYAS IN WHICH THE SPECIMENS ARE FOUND PROTRUDING FROM THE PERPENDICULAR BANKS

In the excellent collection of Dr. Austin of Porto Cortez is a magnificent stone specimen in the shape of a half-moon, measuring about 14 in. from tip to tip and which came from this section. It is very skillfully shaped and has a sharp edge upon the back, lending ground to the suggestion of its owner that it might have been used for chopping purposes, much in the same manner as the similar instrument now employed by the natives. This collection is a most noteworthy one and contains many specimens of the finest type from the valley of the Oloa.

On the Chamelecon there is a Playa del Muerto near Naco, which is caused by the encroaching of the river upon the site of the ruins, yet about 6 miles below the town of Chamelecon the most noted one on this stream is found. Here there is a recurrence of the conditions noted upon the Oloa on a smaller scale—human bones, pottery, stone implements and figures of terra cotta are washed out by the flood waters, and when the level of the river drops to its normal height a new harvest of culture symbols awaits the industrious, though frequently unappreciative, husbandman.

These *playas* display neither in their natural condition nor upon excavation any structural lines whatever, while the pottery is frequently found in strata which has given rise to a supposition that they were washed from some point above and deposited by the river—a manifest mistake when it is remembered that the specimens are confined to certain well-defined areas, and not strewn promiscuously along the river's bank, and that frequently an *olla* broken into several pieces will be discovered, each piece regularly laid together in one stratum.

Two questions, then, at once present themselves—were the *playas* an-

cient burial sites originally at a safe distance from the river, but which subsequent changes in the course of the stream brought within its reach, or were they formerly located near the river's bank and laid bare through the process of natural erosion?—Quite a material difference, as in the former case a very respectable age would naturally have to be presupposed. The chief difficulty to this solution is the number of deposits opened by the river in the space of a few miles, unless this portion of the Oloa valley was a vast necropolis, which the facts do not seem to substantiate. On the other hand, the well-known predilection of the Indians for securing a safe burial site and their knowledge of the river would seem to answer a negative to the second question. Further, a very evident change in levels has taken place here also, as one of the skulls found was nearly 20 ft. beneath the surface and, together with many pieces of the pottery, below the normal water line. Neither did the writer find any specimens in the shallowest stratum within 7 ft. of the surface. Further, no mounds were noted in connection with these deposits. All other burial places examined were in the form of mounds, so it is probable that these have been leveled by successive floods, to which the Oloa is exceedingly susceptible.

It therefore seems to follow that there must have been great activity of the river during a long period of years to cover these remains with such a deep deposit of alluvial soil, and to have changed the entire water level of the valley so as to permit interments that would now be considered impossible—a probable change of the river's course undoubtedly being involved.

Hence it may be assumed that in that distant day when the possessor of the small crushed skull was laid to his final rest the river flowed at a lower level in another portion of the valley, and that it was yet many long years before pursuing its headlong way it was to bury its dead beneath a still heavier sedimentary shroud and then eventually to bring the crumbling bones to light upon the grim stretches of the "Shores of the Dead."

A. HOOTON BLACKISTON.



TERRA COTTA STAMP FROM THE VALLEY OF CHAMELECON



GENERAL VIEW OF EXCAVATED JERICHO

EXCAVATED JERICHO

EXCAVATION is an instructor, substantiator, and enlightener, and should be of interest to all who read and study the records of past times. During the past 20 years excavators have unearthed much that has thrown light on ancient sites and customs; especially has this been the case in Palestine, where the excavation societies of England and Germany have done so much along these lines.

The last place attacked by the pick, spade and crowbar of the excavator, and with most valuable results, is the site of Jericho, the city first taken by the Israelites after they had crossed the Jordan. For several months during the cool season for the past 3 years, hundreds of men, women and girls have been busily engaged on the huge mounds that have been undisturbed for long, long centuries, how many it would be almost impossible to say or even guess. The result of all this expenditure of money and labor has been to lay bare the probable site of Jericho as it was vacated during the early years of the Kings.

It is to be regretted that the German excavators have been so reticent over the discoveries made on this interesting site, but such is the case, and the ancient pottery, coins, and such things were all shipped off to some place in Europe without anyone having opportunity to see them; but what is left is interesting as it gives some idea of the way the people lived and did things so far back in the history of the Canaanites; therefore these lines are



EXCAVATIONS AT JERICHO SHOWING SHAFTS DUG TO LOCATE WALLS AND FOUNDATIONS. WALLS ARE MUD BRICK

written and photographs reproduced, so that the reader may get some idea as to how "excavated Jericho" looks after being deserted by the excavator.

The story of the fall of Jericho after being encompassed by the Israelites is of so unique a nature, that we get enlarged ideas as to the size of the city that succumbed in so remarkable a manner, whereas in reality Jericho was what we should call a village very compactly built, the houses being nothing more than rooms adjoining one another, as will be seen by the illustrations taken on the spot. The location of the city, for such we shall call it, was directly under the eastern border of the wilderness and mountains of Judea, as well as under the shadow of what has been named by tradition the Mount of Temptation. No doubt the presence of a strong spring of good water was accountable for the building of the city there, for water is a necessity for any people.

The excavators set to work in the usual way by making huge incisions in the mound from different points, and then working crossways from one to the other. It was not long before they were well rewarded for their pains by coming across low walls built of sun-dried mud bricks, each one about 15 in. square and 6 in. thick. As the accumulation of debris was cleared away, small rooms began to appear, and it was not long ere rows of such were discovered, each with an entrance off from a long, narrow passage that ran along the entire front of these tiny dwellings. In many of these Jericho hovels, which in extent were about 9 ft. by 6, there were traces of fire, and

the conclusion is that the cooking for the residents was done in one corner of these limited homes. In some of the tiny enclosures, for that is all they can be called, are the well-preserved remains of earthenware water jars in which the daily supply for the family was stored.

At one end of the city, that toward the southwest, the well-preserved remains of a small citadel were discovered, sufficient to show that the inhabitants of Jericho found it necessary to be prepared against the attacks of their warlike neighbors. Further excavation is necessary to reveal the extent and capacity of this military section of the city.

Much labor was expended in unearthing the walls of the place. From what has been revealed, there appear to have been three walls, one built of huge unhewn blocks of stone forming the outer defense of the city, and two inner walls composed entirely of huge mudbricks. On the north and west sides of the city the excavators were successful in unearthing three sections of the foundation of what was probably the original wall of the city, and is interesting as a sample of early Canaanitish work. All three pieces of wall are alike in manner of construction. Instead of being built upright, the wall has a decided slope inward, and, as will be seen by the illustration, there are no regular courses of hewn stone, but a jumble of all kinds of stone intermixed with a very durable mortar, which has stood the test of at least three thousand years.

As some attempts were made to rebuild Jericho after its first fall, it was not to be expected that anything in the nature of fallen walls was to be found, but we are fairly safe in concluding that what has been brought to light is the original foundation of the wall that surrounded Jericho at the time of the entrance into Canaan by the Israelites.¹ This discovery alone proves that the task of the excavator has not been in vain.

Among the ruins were found various kinds of pottery, one thing found being quite unusual in that line. It was in the shape of an old time English-horn lantern, but made entirely of earthenware; for what purpose it was used has yet to be determined. Quantities of round balls, some of stone, others of baked clay, were found, each having a hole through the center. These were either weaver's weights or weights used in connection with the trade and commerce of those days. So numerous were these that quantities were left lying about the ruins and have been taken to all parts of the world by travelers who have visited the place since it was vacated by excavators.

Hand mills of a very primitive kind were also found in the tiny homes. They are different from anything in use in these days, as there was no revolving stone to crush the grain. In form these mills were oblong, slightly hollow in the middle, and, instead of the grain being ground by an upper stone, it was crushed by a heavy stone being rolled to and fro on it, which must have been a much more laborious process than that of the present time. The stones forming this important item of household necessity are very rudely hewn and finished, and take us back to a time when the people

¹ This statement is of special importance at the present time as newspaper reports have been in circulation to the effect that the excavations by the Germans proved that the walls of Jericho never fell. Whether this is the actual conclusion of the German excavators or not, we have not been able to ascertain as yet. [Editor.]



PECULIAR STRUCTURE UNEARTHED AT JERICHO. THESE ARE ALWAYS SOME DISTANCE FROM THE TINY LIVING ROOMS. THEIR USE IS UNDETERMINED AS YET.

were not so efficient in the art of handling stone as they were later down in the centuries.

Scattered about over the ruins are numerous stones distinctly showing that the dwellings had doors which were hung on hinges which revolved in upper and lower sockets, the latter being deep holes hollowed out in heavy, hard slabs of flint or limestone. This style of door hinge, still in vogue in out-of-the-way places, is one of the simplest and most primitive modes of swinging a door, and has probably come down from preceding generations.

Among the many things that were unearthed within the walls of the city was one which has not a little puzzled those that have seen it, and even yet awaits a reasonable explanation as to its probable use and purpose. Referring to the illustration (page—), it will be seen to resemble an elongated drum standing erect, about 12 ft. high. It is built entirely of mud and has the appearance of being solid, for there is nothing in the way of entrance or opening either on the top or in the sides. Such objects seem to have been erected in such positions as to be protected from any likely damage, and, being isolated from their surroundings by about a foot of space, it would appear that the constructors were desirous of protecting them from damp or the inroads of vermin or rodents. Around the top is a barricade



ANCIENT WALL OF CRUDE CANAANITISH WORKMANSHIP

about 12 in. high, made of clay, which was probably intended to keep whatever was deposited on it from rolling or falling off. As far as is known, nothing of the kind has been found in the other sites unearthed in Palestine, and in this respect the excavations of Jericho are unique.

Nothing in the way of obelisks or pillars was found that would connect with the worship of those times, although once the excavators thought that they had come upon the religious centre of the city, but there was nothing of sufficient importance to verify anything connected with early Semitic worship.

As at Gezer, several skeletons were found under the foundations of the buildings and houses, leading us to believe that the early inhabitants of



LIVING ROOMS EXCAVATED AT JERICHO

Palestine were accustomed to slay a human being as a sacrifice on the construction or dedication of a home or public place.

The probability is that the remains of this early Canaanitish city will not long remain in their present condition, for the able men who undertook the revealing of this ancient site are of the opinion that under what has been exposed is a pre-historic city, and, with permission granted from the authorities in Constantinople, excavations might begin again and what has been revealed of Joshua's Jericho pass off the face of the earth forever.

It was a matter of regret to the excavators that nothing in the way of inscribed stones or tablets was found among the ruins or accumulation of debris, and although great care was taken to sift and examine all that was dug up, nothing in the way of writing was found. As far as can be learned, the only letters or words discovered were those found on the handles of jars and pitchers, and these were nearly all of one kind and referred to some one of the many gods of that period.

Although there may have been disappointment along some lines as regards the results of 3 seasons' work, yet it must be admitted that much of interest has been added to the world of discovery and research, and not the least is the location and probable appearance of an early city of the Holy Land, thus confirming, as nothing else can, the truth of the Bible in what it records of the doings of the early inhabitants of the land.



FIG. 1. A ZUÑI JAR

EXAMPLES OF UNUSUAL ZUÑIAN POTTERY

IT IS a long time now since I visited Zuñi—as long ago as April 19, 1885—when I was there for a few days in charge of the military escort that took Professor J. W. P. Jenks of Brown University and Mr. Gail Borden of Philadelphia to the Pueblo. Both these well-known men have long ago joined, as a Zuñi Indian would say, “our lost others.” My account of that very delightful trip has been published elsewhere.

We were treated with marked courtesy by the missionary there, as well as by Mr. Graham, the trader on the reservation. Through the kindness of the former, I had the opportunity of observing some of the women potters of the tribe go through the entire process of making a number of large figure-painted jars, which they were especially requested to do with great care. These were purchased next day by my Philadelphia friend, while I preferred to apply my space and means to obtaining those which had a far greater value for me. When I say space, I mean the room in the ambulance to store them to take back to Fort Wingate, New Mexico, where I was stationed at the time, as post surgeon. Through the friendly aid of the missionary and by getting into the good graces of the governor, who was delighted to find that I knew so many people in Washington connected with the Survey and the Bureau of Ethnology, I secured two particularly fine jars, of large size, and very interestingly decorated. Moreover, they had been carefully made for their own use and so were the real thing in all particulars. But in addition to these I took occasion to let the governor know that I was more desirous of obtaining some old pieces, whether big or little, cracked or whole. At first he shrugged his shoulders, shook his head and

led me to believe that Mr. Frank Cushing, or Mr. James Stevenson or Mrs. Stevenson, or others had taken in all of that sort a year or two before. This I declined to credit, and knowing the Indian nature through my long residence among them, it was not a great while before I got around him, and we were together searching all the old and remote nooks and corners, that we could find in the town. As a result of this investigation, we gathered together some 7 or 8 very odd-looking little bits of old Zuñi ware, the like of which, it struck me at the time I had never seen before, and withal had a very unfamiliar look about them. This collection I promptly purchased, and subsequently landed safely at home.

At that time, there was no one at Fort Wingate who possessed any unusual or exact knowledge with respect to Zuñi pottery, so my purchases were reserved for better and more expert examiners. The missionary and the trader at the Pueblo assured me that the pieces I had secured were "out of the common run." Personally, I had not given the matter much attention, as my entire spare time was given over to a study of the zoölogy of the region, and the description of a great quantity of anatomical material sent me for description by Professor Baird of the Smithsonian Institution.

A short time afterwards, I entertained at my quarters the late Doctor Cyrus Thomas and Mr. Constantine Pilling, both of the United States Geological Survey. Doctor Thomas was much taken with the small jar of the collection, here shown in fig. 2, and remarked in regard to it, that he had never seen anything like it in all of the government and private collections of Zuñi pottery studied by him—and, as we all know, Doctor Thomas was well versed in Indian pottery, especially that of the pueblos, as well as of the ancient cliff-dwellers. A year or so before his death, which occurred in July, 1888, the distinguished ethnologist, Mr. James Stevenson, examined these pieces and said that he had never obtained anything quite like them and that one or two of them were quite unusual in material coming from Zuñi. To the best of my recollection, this was likewise the opinion of the late Mr. Frank Hamilton Cushing, and very recently, nearly a quarter of a century after my obtaining these particular pieces of ware, Mr. DeLancy Gill of the United States Bureau of Ethnology, was especially struck with the little jar seen in fig. 3, and said that a description and illustration of it would be well worthy of publication. Having a full set of the *Annual Reports of the Bureau of Ethnology* in my personal library, I next studied my ware in the light of the very extensive and classic contributions of Professor W. H. Holmes and other authorities to those volumes, and therein have failed to find any specimens of Zuñi pottery at all closely resembling the pieces in my collection, before me—that is either in the particular of form, or of decoration.

In view of all these facts and opinions, it has occurred to me to give a brief description of the two more interesting pieces in this collection, which may be set forth as follows:—

The vase, here shown in fig. 2, is a trifle over 8 in. high, with a circumference of 17 in. at its greatest swell. At its opening or aperture it measures $3\frac{1}{2}$ in., the periphery rolling very slightly outwards. In form it is somewhat a symmetrical, and upon the whole was evidently made with no



FIG. 2. A ZUÑI JAR

great care, or else is the work of an unskilled potter. Its surface is rough and unglazed, and the vessel is only moderately thick,—hard and with a certain amount of ring to it, when struck with some light object. In color the clay has turned to a reddish gray, while internally it is of a sooty black, taken on by the firing. The only ornamentations it presents are the irregularly disposed and well-pronounced indentations all over its external surface, made by some small blunt instrument. In some places these are small, while in others they are scraggly lines, exhibiting the haste of the potter to get over the surface and complete the work. These scarifications in no way suggest the ornamented surface produced in the early or archaic coiled ware, though the fact is well known that Zuñian, as well as other pueblan potters, thus made attempts at such imitations.

A vase of this manufacture may be comparatively modern, or it may be of considerable age, for according to Cushing,

The succession in the methods of ornamentation of Pueblo pottery seems to have been first by incision or indentation; then by relief; afterward by painting in black on a natural or light surface; finally, by painting in color on a white or colored surface.¹

What seems to the writer to be a very unusual combination of decorations is here shown in the small pot figured in the first cut of this article. Here we have the lower part of the vessel very similar to the vase just described, that is, rough, uncolored and irregularly marked with the same kind of indentations, while the upper part is smooth, decorated by painting with a black figuration, as shown on a white surface. This interesting little jar, nearly 5 in. high, forms a part of my own collection, and was obtained at Zuñi, at the same time that the others were. A piece of ware of this kind, it would appear, represents work done during a transitional pe-



FIG. 3. A UNIQUE ZUÑI JAR

riod, when both styles of ornamentation were in vogue, showing, too, that the method of indentation has been brought down to modern times. The markings indicate that this small jar was made by a virgin.

Of still greater interest is the remarkable little jar shown in fig. 3,—less than $3\frac{1}{2}$ in. high; 3 in. in diameter at its nearly circular somewhat everted brim. This is, as a piece of Zuñi ware, a particularly crude example of pottery work, and is probably the handiwork of some little girl, or maybe an old woman, and just why it should have received such elaborate decoration is quite problematical. Internally it is coarse and rough, due to the indifferent clay from which it was made. This roughness is but poorly concealed by the painting and decorations upon its surface. Below the latter, the form of the vessel is hemispherical, no attempt having been made to square its base, in order to have it stand steady.

¹ Frank H. Cushing, "A Study of Pueblo Pottery as illustrative of Zuñi Culture-growth." *Ann. Rep. of the Bu. of Ethn.*, 1882-3, p. 507.

The figures as shown in the cut, are black upon a white ground, as is also the brim, including the entire internal surface of the everted portion. The decorations including the band upon which they rest, and the bottom, are all of a dull brick red, with black limiting lines of very narrow widths, both above and below. These decorations are of two kinds, the upper circlet consisting of 22 irregular little cones, varying somewhat in size and evidently squeezed on with the fingers which moulded them. Below these is a circlet of 8 coiled fillets also differing somewhat in size, having a form as shown in fig. 3. A central black line follows the curve of each fillet on its surface, as a crude addition to such decorative efforts as they possess. This band, as a whole, does not lie squarely in the horizontal plane, but exhibits a perceptible wave as it passes around the jar, thus showing a faulty symmetry. Indeed the entire product is lacking in the latter quality to a considerable degree.

Unquestionably, this little jar is of modern make, while its ornaments in relief are all of a style pertaining to archaic patterns, and, so far as my observations go, very rarely used by the Zuñis of the present day. While the relief ornaments, such as the single and double coiled fillets, and the nodes and cones, on pottery were but rarely employed, by the potters of the ancient Pueblos, they nevertheless arose there, and have persisted as a part of the art to the present time, and they are now of very much rarer occurrence, while the forms remain practically the same. Hence when met with, they are worthy of description for permanent preservation as in the present instance.

R. W. SHUFELDT.

Washington, D. C.



AN ALMOST FORGOTTEN BATTLE

THE operations of the British forces in Chesapeake Bay and its tributary waters during the War of 1812, were characterized by a spirit of extreme recklessness and dare-devil bravery, inspired partly no doubt by a general belief that the people of this country were at heart cowards, and practically incapable of properly defending their homes and their honor. In some cases this rashness was attended with success, if plunder and the spoliation of private property can be brought under that term, but in others it met with the merited penalty of defeat and heavy loss. One of the most conspicuous cases of the latter kind is comprehended in the attack of the British army and fleet upon Craney Island, in the Elizabeth River, near Norfolk, Va., in June, 1813—an affair that was intended to result in the capture of the United States frigate *Constellation*, of the City of Norfolk, and of the Navy Yard, with its large and valuable stores of public property. The island was small—about 35 acres in extent—and was without natural defences, flat and so low that part of it was always in danger of being submerged at high tide; but it had been intelligently prepared for an attack, it had a well-built system of intrenchments, it had a battery of 7 guns, 2 of them 18-pounders, and it had a force of over 700 men, regulars, seamen, marines, and militia, commanded by able and courageous officers. Besides these, there was a contiguous force of small barges with cannon, and near by the armed frigate *Constellation*. Notwithstanding these rather formidable preparations, the British commanders, instead of shelling the island from a distance, determined to take it by storm. The attacking force consisted of about 2,500 men, infantry and marines, who landed far away from the fortification, but proceeded at once toward it; also of 50 large barges, armed with suitable sized ordnance, and containing a force of 1,500 sailors and marines, which force moved against the island almost simultaneously with the land troops. The result was a signal defeat for the British. The land attack was met by rapid and deadly discharges from the American battery, so effective that the whole body of the enemy was driven back ignominiously to their landing place, while the water attack which was equally courageous, was also unsuccessful. As the first division of the flotilla approached, the whole American battery belched forth fire and smoke, and round, grape, and canister shot with such accurate aim and in such rapid succession that a fearful shock was given to the attacking force. Yet in the face of this fire the British continued to advance, until the storm of metal was too terrible to be endured. The boats were thrown into confusion. One of them, commanded by Captain Hanchett said to have been a natural son of George the Third, was sunk with 4 others in shoal water, while the rest, together with the remains of the land force, escaped to their ships. It was a pronounced and disgraceful defeat; so that before the close of the day the British leaders, admiral Cockburn among them, had abandoned all hope of seizing Norfolk, the *Constellation*, or the Navy Yard. It was their last attempt in that quarter.

The British attack upon the little settlement at St. Michael's in Talbot County, Maryland, in August, 1814, was another conspicuous instance of the recklessness alluded to. The village was founded by ship-builders, and was rather famous as the place where most of the fast-sailing privateers known as "Baltimore clippers" were built. At the time of the attack several of these vessels were on the stocks. The purpose of Admiral Cockburn, who though not then the commander of the enemy's fleet, seems to have dominated it, was to destroy the ship yards and the village, and to this end on the morning of the eleventh, with 11 barges of troops and sailors (each barge armed with a 6-pounder field-piece), he made a determined charge on the place. The Americans, fortunately, and as might have been foreseen by a prudent enemy, had erected two batteries to defend themselves, and behind them they made a gallant resistance. The result was that the Americans sustained no loss whatever, except the spiking of two or three of their guns, while the British suffered severely; a single discharge from one of the batteries killing 19 of them, besides wounding many more; and in the end they were forced back tumultuously to their boats, never to disturb St. Michael's again.

The attack by Sir Peter Parker upon the little village of Moorfields, near Chestertown, on the Eastern Shore of Maryland, is another instance of this same spirit of bloody-mindedness and rashness. It will be remembered that this officer, said to have been the handsomest man in the English navy—a cousin of the poet Lord Byron—having been detailed to make a diversion with his flagship and another frigate in the northern part of the bay, while Cockburn and General Ross were attacking the City of Washington, and having committed numberless acts of oppression against defenceless non-combatants—received an order from Admiral Cockrane to return to the Patuxent where the main part of the fleet was anchored; but with the customary deviltry and imprudence that has been adverted to, he could not content himself with simply obeying his orders, but must first have, as he expressed it, "a frolic with the Yankees." He made the attack and had his "frolic", but it turned out to be a tragedy; for instead of overpowering the Yankees, and plundering and burning their homes, which was intended to be the outcome of the "frolic," he lost his own life, and the rest of the force, after leaving on the field 13 of their associates dead and three others wounded, fled disgracefully back to their ships; so that this would-be conqueror, instead of returning to England with a fresh garland on his brow, went back in a hogshead of alcohol.

The attack on Baltimore was still another case of foolhardiness. Here the British fleet in order to accomplish their purpose, had to pass two well-manned forts before getting to the city, and their troops were to have before them an army greater than their own, and led by skilled veterans—the commander-in-chief, General Samuel Smith, being a brave old Revolutionary soldier—all which must have been known to Cochrane and Ross, the leaders of the British naval and military forces. The result every schoolboy knows. Ross, instead of breakfasting in Baltimore, as he boasted he would do, had his career cut short by death on the battle-field. Fort McHenry and North Point, commemorated in our noble national song, "The Star Spangled

Banner," are proud testimonials of the valor of our countrymen, and eloquent illustrations of the folly of their enemy.

The British invasion of the City of Washington was attended with more success than in the other cases cited; but it was equally reckless. What reasonable commander could have expected that an expedition embodying only some 5000 or 6000 men, without cavalry and practically without artillery, requiring a march of over 20 miles in the heat of summer through an enemy's country, to the Capital of a nation, defended by a greater force than their own, and where ample time existed with ordinary intelligence and activity, to have thrown up sufficient and satisfactory earthworks for defence, would result in anything but defeat? And what military advantage was to be expected in case of success? Admitting that the expedition was successful, what good to the British really resulted? The destruction of a few public and private buildings was all the damage inflicted upon the Americans; their losses in the battle were quite insignificant. And what an expense to the British attended this expedition? Eternal disgrace and the loss in killed, wounded and missing of about ten per cent of their whole army—a really extraordinary loss. Under ordinary circumstances, the chances were largely against them. With such a leader as Andrew Jackson on the side of the Americans, the British expeditionary force would probably have been annihilated.

But although this land attack upon Washington may be regarded as approaching the extremity of recklessness, what can be thought of the naval expedition, with the same end in view, of Captain Gordon, up the Potomac River, planned by the British commander at the same time? To carry out this part of the expedition against the Capital, 7 sailing vessels (no steamers being then in existence) had to be brought up about 100 miles over a tortuous stream, even now rather difficult to navigate, covered with mud flats and sand bars, bordered at many places with high banks on which easily defended fortifications might have been quickly and inexpensively constructed, and, above all, on which was already erected a masonry fort, scientifically built, capable, under a man like Colonel Croghan, for instance, of destroying any fleet that might attempt to pass it. So difficult was the navigation of the stream that the British were 10 days in reaching Fort Washington, a progress that was effected only by the severest labor—five days alone being used up in warping the vessels over a course of fifty miles. Captain Gordon states in his special report to Admiral Cochrane, that each of his ships was aground no less than twenty-times, and every time it had to be drawn off by main strength. The proper and logical result of such an expedition should have been the complete destruction of the fleet. Instead of this, however, the British proceeded up the river past Fort Washington, which they took without opposition, and as far as Alexandria, which city, being defenceless, they ruthlessly plundered, and then started to return.

During this retreat, a serious attempt was made by the Americans to destroy the British fleet, notable as showing that the humiliating affair at Bladensburg had not entirely demoralized the government at Washington, and that some of the most capable officers in the United States navy were

selected for the work. The plan was to send down by land to suitable points along the river, enough ammunition and cannon to equip two temporary batteries one to be in charge of Commodore David Porter and the other in charge of Commodore Oliver H. Perry, and to provide two or three fire ships, under the control of Commodore John Rodgers—the batteries to sink the enemy's ships if possible, or the fire ships to burn them. The main engagement that occurred in this attempt, between the British force and that under Commodore Porter, and now almost a forgotten incident in the war of 1812, may not improperly be called—

THE BATTLE OF THE WHITE-HOUSE.

ABOUT 16 miles from Washington is the historic estate of Belvoir, sometimes called the "White-House," fronting on the Potomac River, and extending from Dogue Creek, formerly the southern boundary of Mount Vernon, to Gunston Cove and Accotink Creek. It was originally a part of the immense tract known as the Northern Neck of Virginia, which was granted by Charles the Second, King of England to certain favorites, and by them sold to the Earl of Culpeper, through whom, by inheritance it finally got into the possession of the celebrated Thomas Fairfax, Baron Cameron, who came from England to look personally after his property in 1739, and who died in 1781, at the age of 92 years, at his sequestered home, Greenway Court, in the Shenandoah Valley, near Winchester, Va. Belvoir, in George Washington's youth, was occupied by William Fairfax, a cousin of Lord Fairfax, and his land agent—a man of education and refinement, who had seen much of the world, and had been a prominent actor in its affairs. Occupying contiguous estates, it was but natural that the families of Mount Vernon and of Belvoir should become very intimate, more especially as Lawrence Washington, the proprietor of Mount Vernon, had married the daughter of Mr. Fairfax, and that young George Washington, who was almost constantly residing with his brother, should also enjoy this intimacy. In fact, during his stay at Mount Vernon he was in daily communication with the Fairfaxes, by whom he was greatly liked and respected. Indeed, there is no reason to doubt that to Lord Fairfax and his cousin William, George Washington was indebted for much of his social training, for the incipiency and encouragement of his ambition, and for his first employment as a surveyor of the Fairfax lands in the upper portion of the tract, the experience gained in which employment, lasting over three years, probably led to his being chosen by Governor Dinwiddie as his bearer of dispatches to the French commandant at Fort du Quesne, then to his appointment as colonel in the Colonial militia, then to his being commissioned as aid to General Braddock in his unfortunate expedition against the French and Indians, then to his election to the continental Congress, and finally to his fortunate selection as commander-in-chief of the army in the War of the Revolution. On one of the bluffs of this historic plantation, within sight of Mount Vernon and of Fort Washington, so disgracefully surrendered to the British fleet during its ascent to Alexandria a few weeks before, Commodore Porter decided to plant his little battery, and to

begin his fight. His force consisted of a regiment of Virginia militia under General John P. Hungerford, together with a detachment of marines and sailors, the latter being part of the crew of his old ship the *Essex*, collected, under the supposition that he was to perform another duty, by the following animating summons, published in the newspapers:

FREE TRADE AND SAILORS' RIGHTS.

To the crew of the Old Essex. SAILORS.—The enemy is about attempting the destruction of your new ship at Washington, and I am ordered there to defend her. I shall proceed immediately, and all disposed to accompany me will meet me at 5 o'clock this afternoon at the Navy Agent's Office.

D. PORTER.

NEW YORK, August 22, 1814.

Porter lost no time in bringing his sailors to Washington, nor in repairing to the spot where the battle was to be fought, getting there in advance of his men, and before the militia of General Hungerford had fully cleared the place of obstructions. In his official report to the Secretary of the Navy, made on September 7, 1814, he says:

Agreeable to your orders of the 31st ultimo, I proceeded with the detachment of sailors and marines under my command to the White House, on the west bank of the Potomac, there to erect batteries and attempt the destruction of the enemy's ships on their passage down the river. Captain Creighton, Lieutenant Clark, and several other navy officers, as well as Mr. Augustus Monroe, Mr. Ferdinando Fairfax, and several other citizens and officers of the militia and volunteer companies, hearing of my destination, volunteered their services on the occasion, and ably supported me through the arduous and fatiguing enterprise. By preceding my men I arrived, in company with the honorable Secretary of State and Generals Hungerford and Young, on the evening of the 1st inst., at the spot fixed upon, where I found a few militia belonging to General Hungerford's army clearing away the trees to make room for mounting our cannon, which had not yet arrived, but which had been seen on their way down, consisting of three long 18's and two 12's. Generals Hungerford and Young had received orders to coöperate with me, to detach men on my requisition, and make such disposition of their forces as would effectually protect me in the rear in the event of the enemy's landing. The positions they were to occupy were also allotted to them by mutual agreement when the enemy should attempt to pass, as it was believed that, concealed by the thick woods on the right bank, they would be enabled to clear the enemy's decks with their musketry, and in a great measure divert his fire from our battery. At the moment of my arrival, one of the enemy's vessels of war—a brig of eighteen guns—was seen coming up. General Hungerford and his men took their position in the woods; and two small four-pounders that instant arriving, I caused them to be placed on the edge of the bank, and on the enemy arriving abreast of us, we opened a brisk fire on him. Having a fine breeze, he was enabled to pass us, but could fire only one broadside as he crossed the fire of our field-pieces and musketry. The militia continued following him up along the bank and greatly annoyed him by their well-directed fire. In this affair we had only one man wounded; and we believed our elevated position rendered breastworks useless, as it was remarked that none but the enemy's grape passed over us: his round shot went into the bank below. No men could have shown more zeal on the occasion than those composing the army; and if they committed any errors which gave rise to confusion, they proceeded from an over-desire to injure the enemy. Of the conduct of the sailors and marines I deem it unnecessary to say anything: their conduct on all such occasions has ever been uniform.

On the night of September 1 Commodore Porter's men slept near the battery. He himself retired to the farmhouse of Mr. Ferdinando Fairfax

about a mile distant, where he staid until morning. Then he returned, and renewed the fight. Continuing his report he says:

The evening of our arrival two 18-pounders reached our position, and next morning one of the enemy's bomb-ships and two barges, one carrying a long two-and-thirty, the other a mortar, commenced their operations upon us, the first throwing shells in front, beyond the reach of our shot, the other flanking us on our right. Several shells fell near and burst over our battery, and although the firing lasted all day without intermission, it had no other effect than to accustom the militia to the danger. In the afternoon I took an 18-pounder to a more advanced point, about a mile distant and commenced a fire on the bomb-ship, which did so much execution as to draw on us the fire of all their vessels, including a schooner and an 18-gun brig, which had dropped down that day.

During the night the fleet, being unprovided with pilots familiar with the channel of the river, remained quiescent; but in the morning the enemy resumed the attack. The report of the Commodore is as follows:

On the 3d the enemy was reinforced from above by another bomb-ship and a sloop of war fitted up as a rocket-ship. The latter anchoring within reach of our battery, we were enabled to play upon her with great effect, and compelled her to change her position. All this day and the succeeding night the enemy kept up a brisk fire on us of shot, shells, and rockets. In the course of the day their prizes from Alexandria anchored above them, and out of the reach of our cannon. The work of our battery went on. Five light field-pieces from four to six pounders, arrived and were planted, and we had every hope of soon receiving some long 32-pounders from Washington. We built a furnace for hot shot, and time only appeared necessary to make ourselves formidable.

Evidently the Commodore and his men had pluck and energy enough, to say nothing of skill in handling their guns; but these guns were too small. Four and six pound shot did comparatively little damage to the enemy's ships. However, there was no diminution of effort on either side. The report continues:

The whole of the 4th and 5th an incessant fire was kept up by the enemy night and day. He had once attempted landing at night, it is supposed with an intention of spiking the guns of our battery, but was repulsed by the picket-guard. My former plan of annoying him by advancing guns was adopted, to better effect than before. The rocket ship, lying close in shore, was much cut up by a 12-pounder and two 6's carried to a point. Scarcely a shot missed his hull, and for one hour we drew to this point the fire of all the enemy's force. The cool indifference of my sailors to the danger to which they were exposed was very remarkable, and the intrepidity of Captain Griffith, of the Alexandria artillery, his officers and men, merits the highest eulogiums. They fought their six-pounders until their ammunition was expended, and coolly retired with their guns, when ordered to do so, under a shower of the enemy's shot. We now, as if by mutual consent, ceased all hostilities. Some 32-pounders arrived. Carpenters were employed to make carriages. Two mortars, a large quantity of ammunition, and an abundance of shot and shells reached us. Two barges were equipped and everything promised that we should speedily be put in a proper state for annoying the enemy. In the evening two frigates anchored alone above us, making his whole force—

Two frigates, carrying.....	96 guns.
Four bomb-ships, carrying.....	30 “
One sloop of war, fitted as a rocket-ship, carrying.....	26 guns.
One brig, carrying.....	18 “
One schooner, carrying.....	1 gun.
Two barges, carrying.....	2 guns.
Total.....	173 “

The guns mounted in the battery were three 18-pounders, two 12-pounders, six 9-pounders, and two 4's. My two mortars were without carriages, as all my 32's; for notwithstanding every effort was made by the government at Washington to have them made there, and by myself on the spot, they could not be completed in time.

From the above statement it is apparent that the battle was a one-sided affair. Certainly 11 vessels, two of them large-frigates, with a total armament of 173 guns, must be regarded as an overmatch for a little hastily built battery of 13 guns, most of them of small caliber, and a trifling force of infantry, made up of raw troops, fighting without intrenchments or other defensive works. Still it is rather remarkable that this little band had been able to keep up the fight for 5 successive days without faltering. Their commanders, the admiral and General Hungerford, were satisfied with them. The former thus concludes his report:

On the morning of the 6th the enemy showed a disposition to move. I advised General Hungerford of the same, and prepared to meet them with hot shot. About 12 o'clock the two frigates got under way with a fair wind and tide, and stood down for us, the rocket-sloop, bomb-vessels, brig, schooner and prizes following in succession, the gunboats endeavoring to flank us on our right. I immediately dispatched an officer to General Hungerford to request him to take the position agreed upon in the woods on the heights; but from the distance of his camp and the quick approach of the enemy he was unable to march before the firing commenced and after that period it was almost impossible, as I have understood, from the vast quantities of shot, shell, and rockets which were showered over the hills and fell among his troops. As the enemy approached, a well-directed fire was kept up from the battery with hot and cold shot, and my brave officers and men stood the broadsides of the ships with unparalleled firmness. I anxiously expected the militia would open their fire of musketry, but was disappointed; the cause was not explained until after the firing ceased. Finding that the whole of the enemy's fire was directed at my force, and that in a few minutes all his force would be brought to bear on me, and entertaining no hope of preventing his passage, as some of my men had already been killed and wounded, I determined not to make a needless sacrifice: and when the enemy was on the point of anchoring abreast the battery, after sustaining his fire one hour and a quarter, I directed the officers and men to retire behind a hill on our left, and be in readiness to charge the enemy if he should land to spike our guns. The two frigates anchored abreast, the bombs, sloops, and smaller vessels passed outside them, all pouring into the battery and neighboring woods a tremendous fire of every description of missile. In the woods on the left a company of riflemen from Jefferson County, Virginia, under Captain George W. Humphreys, greatly distinguished themselves by a well-directed fire on the enemy's decks, as did a company of militia under the command of Captain Gena, who was posted by me on the right. The first, lost one man killed and one sergeant and four privates wounded; the latter, two privates killed. The company of artillery which so much distinguished itself on a previous occasion behaved with no less gallantry to-day; and it affords me much pleasure to observe that the militia who came under my immediate notice and were attached to my command, voluntarily or otherwise, conducted themselves in a manner which reflects on themselves and their country the highest honor. Many before the battle requested to be posted near me, and there was no instance where one offered to retire until I gave the the order to retire; and it was not necessary to repeat the order to rally. . . . Those veterans who distinguished themselves under their gallant though unfortunate commander at Bladensburg were all willing to try another battle: they have been again unsuccessful, but no less courageous. Two of them have fallen. . . . After the bombs, gun-vessels, and prizes had all passed, the frigates proceeded down and anchored abreast Indian Head, where a constant firing was kept up until after sunset, but I am fearful with little success on our part. The number we have had killed and wounded on this occasion I cannot ascertain exactly. I am induced to believe, however, it does not exceed thirty: and when

we consider the constant fire which has been kept up by the enemy for the four days preceding their passage by the fort, we should esteem ourselves very fortunate. His damage can never be known by us. Some of his ships were much crippled and I should suppose his loss considerable. . . . When they had passed down I sent a torpedo after them: it was heard to explode about 9 at night, but I have not learnt the effect it produced.

Considering the little time in which Porter had to make his preparations and the almost insignificant equipment given him by the government, the action at the White House was rather remarkable. It confirmed the Commodore's reputation for pluck and energy, and it showed that the militia, when under capable commanders, could be relied on for creditable service. As to this, the report of Brigadier General Hungerford, made to the Secretary of State on the 6th of September, 1814, affords convincing testimony. His report in full is as follows:

HEADQUARTERS CAMP AT WHITE HOUSE, VA.,

September 6, 1814.

Sir: Yesterday morning about 2 o'clock the enemy's squadron discontinued the bombardment which had been kept up with little intermission for three days, weighed anchor, and stood down the river, commencing a heavy fire on the battery and across the neck of land through which the militia were compelled to march to its assistance. The rifle companies under Captains Humphries, Tebbs, and Fields, were immediately ordered down to the battery, which orders were promptly obeyed. I followed with Colonel Parker's regiment and two detachments under Colonels Green and Renno, leaving instructions with General Young to take a position between us and a creek which made up some distance behind, so as to prevent the enemy from falling in our rear, and to cooperate with us, if necessary, at the battery. When I had proceeded with the advance to a point within three or four hundred yards of the river, the troops were halted until I could obtain accurate information of the precise situation of the enemy. About this time Commodore Perry as I understood, finding our little battery insufficient to impede the progress of the vessels, after having long gallantly defended it, and considering a longer contention with such a superiority of metal a wanton sacrifice of blood, ordered the battery to be evacuated and his men to retire, which they did. The two largest of the enemy's vessels then anchored—one just above and the other just below the battery, and commenced a most galling cross-fire of round shot, grape, canister, etc. The troops, which had been previously ordered to shelter themselves from the fire of the enemy, it having become exceedingly severe, were immediately formed and marched back to a place of comparative security. We had scarcely retired when information was brought that the enemy discovered a disposition to land, and aid was necessary to prevent their spiking our cannon. I again moved down with the troops under our command, Colonel Dangerfield with his regiment being sent on before, and had proceeded to a valley within about fifty yards of the battery, when General Young and myself, who were following with the residue of the troops, were met by Commodore Porter, within three or four hundred yards of the river. He thought that it was unnecessary to expose the whole army, and advised that 200 men, which he thought sufficient for the purpose, should be sent down to protect the battery. All the troops were then ordered back, the detail made and sent down under the command of Colonel Green. Major Banks followed with 200 men, to aid if necessary.

Permit me to say that it was impossible for men to have conducted themselves with more intrepidity than the militia on this occasion. Notwithstanding the dreadful cross-fire of every species of missile by the enemy to which they were exposed, without a possibility of returning the fire, (the most trying of all situations,) not a man of my command offered to move until orders to that effect were given, and then it was done slowly and in order. I beg also to mention the promptitude and alacrity with which the second order to march through a tremendous discharge of large shot and grape, for the distance

of about a mile, was immediately obeyed. Captain Humphrey, with his rifle company, was stationed just above the battery and is entitled to the highest commendation for the courage and activity with which he fought. Captain Griffith, of Alexandria, was under the immediate direction of Commodore Porter, who spoke of him in the highest terms of approbation. Captain Janney, of Essex, was near the battery at the time of the action, with a fatigue party of 50 or 60 men, and deserves to be particularly mentioned. Our whole loss was 11 killed and 17 or 18 wounded.

I have the honor to be, etc., etc.,

JOHN P. HUNGERFORD,
Brigadier General, Virginia Militia.

HON. JAMES MONROE.

The attempt at Indian Head—further down the river, and on the Maryland side—under Commodore O. H. Perry, to prevent the passage of the British fleet, ended like Porter's battle, in failure, owing to the same causes—lack of time and insufficiency of equipment and force. But it was marked by bravery and zeal, both on the part of the regulars and the militia. The failure, too, of Commodore Rodgers to burn some of the ship's of the enemy, was also the result of hurried and incomplete preparation, and certainly not of the want of enterprise and courage on the part of either the Commodore or his subordinates. The reports of both officers are interesting at least on that score; and they serve also to show that, as before remarked, the expedition of the British was characterized by an almost utter disregard of ordinary prudence.

MADISON DAVIS.

WASHINGTON, D. C.



BOOK REVIEWS

SUMERIAN ADMINISTRATIVE DOCUMENTS¹

THE latest volume of the Babylonian series of the University Museum deals with a group of tablets discovered by Doctors Peters and Haynes, at Nippur, and preserved in the Museum of the University of Pennsylvania. They are dated in the reigns of the kings of the so-called II Dynasty of Ur, about 2400–2300 B. C. They are all written in the ancient Sumerian language, and furnish valuable material for our knowledge of old Babylonian history, of the Temple administration, and of the commercial and social life that pulsed in the streets of Nippur in this pre-Abrahamic age. The author of this volume, Dr. David W. Myhrman, docent of the University of Upsala, has been at work upon the collections in the Museum by the special arrangement

¹ *Sumerian Administrative Documents Dated in the Reigns of the Kings of the Second Dynasty of Ur from the Temple Archive of Nippur.* By David W. Myhrman. The Babylonian Expedition of the University of Pennsylvania, Series A. Vol. III, part I. Edited by H. V. Hilprecht. XII–146 pages, and 70 plates of Autograph Texts and XII half-tone plates. Published by the University Museum, 1910.

with his University on two occasions, during each of which he devoted several months to copying texts, and the present volume represents in part the fruit of his labours.

In the first chapter of his introduction Myhrman has made a new attempt at settling a difficult problem in Babylonian chronology by endeavouring to determine the exact place in history of the so-called II Dynasty of Ur. He also discusses the relation of the Hammurabi dynasty to the Casite dynasty. After reviewing the opinions of others he offers reasons for holding that the time of the great law-giver, Hammurabi, is to be placed at about 2000 B. C. In the second chapter the tablets themselves are discussed with reference to their provenience, their condition, and the seal impressions found on them. In the third chapter Myhrman gives a general survey of all the texts belonging to this period which have thus far been published. This important review will be acceptable and helpful to those working on similar tablets in the future. In the fourth chapter he discusses the subject matter of the texts, and points out that of the 1500 tablets hitherto published belonging to this period, only a score are contract tablets. Of the 171 texts presented in this volume, the 30 legal documents constitute the most valuable feature, inasmuch as they belong to the earliest contracts known. In the fifth chapter is given a complete list of the date formulas found in these texts, some of which are new, and hence valuable for historical and chronological purposes.

The sixth chapter contains the results of much labour. In it Myhrman has reconstructed the entire lists of dates of the period with which the volume deals. He has endeavoured to give every formula thus far known, with complete references to the sources. This will of necessity be used by scholars for some time to come because it is the most complete collection thus far made.

In the seventh chapter Myhrman has undertaken what might seem a hopeless task, namely the bringing into order of the old Babylonian months as well as the interpretation of the names. His discussions and collections of material will be important for future work on this difficult problem. Myhrman holds that at least 4 different lists of month names were in use practically at the same time. He also holds that it was during the period represented by his tablets that the calendar was changed. He publishes some entirely new month names, and gives new readings for others. Following this discussion he gives a useful comparative scheme of the different month names used during the period.

In the eighth chapter the author presents with commentary his transliterations and translations of 24 specimen tablets, all of which are written in Sumerian. Quite unique are the tablets which he calls "court proceedings" presenting as they do, subject matter, formulas and terms hitherto unknown. Naturally, as Myhrman has stated, many of the translations must be regarded as more or less tentative. In some instances he has given several renderings, and reasons for his conjectural interpretations.

In the following chapter all the new contributions offered by these texts are gathered together, such as new cuneiform signs, readings, terms

in general, legal terms, terms of loans, purchase and account tablets, etc. This is followed by a complete list of proper names, Sumerian and Semitic, which are contained in the texts, a large number of which are entirely new. Following this is the usual description of tablets.

Especially valuable is the system of transcription of Sumerian signs which is offered in the fourteenth chapter. This enables the scholar to determine what character his transcription represents. This is much needed and is valuable; for each scholar adopts his own system, and it is most difficult to know what characters in many instances are represented. It would be a most important gain for Assyriology if scholars generally would agree upon a uniform transcription.

In his 72 plates of texts Myhrman has faithfully endeavoured to make clear and legible copies. Apparently he has avoided shading signs where they were clear, although the surface of the clay may have been rough from exposure. He has produced excellent copies, for which scholars will be grateful. His name must be enrolled among those who are regarded as good copyists. In his discussion he has tried to avoid premature and questionable hypotheses and has honestly endeavoured to build his results upon facts. His work must be regarded as a substantial contribution to the science of Assyriology and Sumeriology, and a credit to the series in which it is published.

ALBERT T. CLAY.



A GUIDE TO THE ANTIQUITIES OF UPPER EGYPT²

GUIDES to Egypt are numerous but the continual advance in our knowledge of ancient Egypt as revealed by the various excavators is so rapid that frequent revision and in many cases complete rewriting is necessary. Mr. Arthur E. P. Weigall's *Guide to the Antiquities of Upper Egypt* covers the ground from Abydos to the frontier of the Sudan, presenting the facts as determined up to the present time. The author has had specially good opportunity to prepare such a volume as he is the Inspector-General of the Department of Antiquities of Upper Egypt under the Egyptian government. The fact that the descriptions in the book were actually written, in all but a few cases, within a "stone's throw" of the temple, tomb or other ruin described insures their accuracy.

The large number of maps and plans add greatly to the value of the work not only as a guide to the actual traveler in that region but also to those who have to do their traveling at home by means of books.

² *A Guide to the Antiquities of Upper Egypt, from Abydos to the Sudan Frontier*, by Arthur E. P. Weigall. 69 maps and plates. The Macmillan Co., N. Y., 1910. Pp. xxiii, 594. Price \$2.50 Net.

RECENT BULLETINS OF THE BUREAU OF AMERICAN ETHNOLOGY³

BULLETIN number 39 of the Bureau of American Ethnology, is a record of the Tlingit Myths and Texts made by John R. Swanton. These myths and texts were collected at Sitka and Wrangell, Alaska, in 1904. The author has collected over 100 of these myths which are given in considerable detail. At the end of the Bulletin abstracts are given of the various myths recorded at Sitka.

David I. Bushnell, Jr., in Bulletin 48 reports his observations on the remnant of the Choctaws of Bayou Lacomb near New Orleans, Louisiana. Mounds in the neighborhood indicate early occupancy of the region where these Choctaws now live. The mounds, however, do not indicate great antiquity. It is difficult to obtain the original religious and other beliefs of the tribe for they have been greatly influenced by Christianity. Nevertheless many of the old beliefs persist so that the record is an important one which becomes more difficult to obtain with each passing year.

THE WAR⁴

MOST of our histories of the Civil War come from those who either fought on the side of the North or whose natural sympathies were on that side. For this reason we are pleased to receive a short personal account of the War as seen by a Southern soldier. The author is James H. Wood who was Captain of Company "D", 37th Virginia Infantry Regiment and so is specially well qualified to write such an account. The point of view is interesting and the personal element adds not only keen interest but real historical value to the book. There is no bitterness against the North, or even the prison officials, expressed in the book. Mr. Wood was a good loser as well as a good fighter and accepted defeat in the proper spirit. He declines to air his prison discomforts and advises that the "mantle of charity" be thrown over the subject by both sides, stating, however, that he attaches no blame to the government but considers the ill treatment on both sides was due to "malignant individual soldiers or persons in petty authority."

³ Bulletin 39 of the Bureau of American Ethnology. Tlingit Myths and Texts recorded by John R. Swanton. Smithsonian Institution, 1909. Pp. 451.

Bulletin 48 of the Bureau of American Ethnology. The Choctaw of Bayou Lacomb, St. Tammany Parish, Louisiana, by David I. Bushnell, Jr. Smithsonian Institution, 1909. Pp. 37 and 22 plates.

⁴ *The War*—"Stonewall" Jackson, His Campaigns and Battles. The Regiments as I saw them, by James H. Wood. Illustrated, pp. 181. The Eddy Press Corporation, Cumberland, Md.

EDITORIAL NOTES

PROFESSOR BADE TO EXPLORE HITTITE COUNTRY.—Professor William F. Bade, of the University of California is planning to organize a party to explore the country of the Hittites.

SOPHOCLES' ANTIGONE.—Sophocles' masterpiece, "Antigone" was given, 30 June, at the University of California. Great care was taken to have the production archæologically correct.

PROFESSOR SAVILLE GONE TO PERU.—Professor Marshall M. Saville, one of our consulting editors, left early in June to spend 8 months studying ethnological problems in Peru and northern Ecuador.

MAMMOTH AND RHINOCEROS REMAINS FOUND IN WICK, ENGLAND.—In November, 1909, remains of the mammoth and rhinoceros were found in excavating for the new Hackney, Wick, sewer. They were found at varying depths in the gravel overlying the blue clay.

CYLINDER CONCERNING SENNACHERIB.—An 8-sided terra cotta cylinder containing many unpublished details of the history of Sennacherib (705 B. C.—681 B. C.) has been found recently. It is almost complete, dated 694 B. C. and written on 8 sides. There are 720 lines of text. The subject is the campaign carried out in 698 B. C. and 695. It depicts Sennacherib as a great architect and far-sighted builder.

SECRETARY TO THE PALESTINE EXPLORATION FUND.—Mr. Archibald C. Dickie has been appointed to take the place made vacant by the recent death of George Armstrong, who has been the Secretary of the Palestine Exploration Fund for many years. Mr. Dickie will only devote a part of his time to the work of the Fund and so will be known as "Assistant Secretary."

PREHISTORIC SKELETON FROM ARIZONA.—A prehistoric skeleton is reported from near Prescott, Arizona. The bones are those of a large man with very long arms. The teeth are peculiar in being very long and sharp. The bones seemed semi-petrified and are well-preserved. The place where it was found is thought to have been a pre-historic fort.

PROFESSOR BUTLER TO EXCAVATE ANCIENT SARDIS.—Professor Howard Crosby Butler has arrived at Smyrna and will excavate ancient Sardis, 5 hours by rail from Smyrna. It is expected that from 2 to 5 years will be spent in the work. Two hundred men will be employed.

MUMMY OF RA-NEFER.—Reports from London say that the mummy of Ra-Nefer, which was found at Hedum, Egypt, in 1892, is now considered of more importance than had been supposed, for it now appears that it is 11 centuries older than any other known mummy. It dates from 3000 B. C., and presents a kind of embalming hitherto unknown.

THE ORIGIN OF THE AZTECS.—In a recent article in *Mexico Today*, Mr. T. S. Denison stated that he considers the Aztecs and kindred tribes Aryan in language and closely related to the Indo-Iranians. His conclusions are based on similarity of place-names in Persia and Mexico, on the agreement of the Mexican vocabulary with the Sanskrit of which he gives numerous examples and on the striking parallel in the Aztec and Christian religious observances.

FRAGMENT OF ANCIENT GOTHIC MANUSCRIPT.—The University of Giessen in Darmstadt recently acquired a number of papyri and parchments, including a double leaf containing part of the Gospel of Luke in Latin and Gothic. The Gothic text is from the translation made in the IV century by Ulfilas. The new document is believed to date from the early part of the V century, and would therefore be the oldest relic of Germanic speech.

ANCIENT GLASS IN HEXHAM ABBEY.—Early this year the Bishop of Newcastle, unveiled a colored window in Hexham Abbey. The window is unique by reason of its containing some glass dug up during the summer of 1909 at Corstopitum, dating from the time when the Romans occupied Britain.

NEED OF PRESERVING ANTIQUITIES IN TENNESSEE.—Miss Mary E. Stewart, of Wisconsin, has recently called attention to the importance of the mounds in Cheatham county, Tennessee, and to the indifference to them shown by the inhabitants of the state. She also reports that the State Historical Society Museum is neglected. The people of Tennessee seem to need to wake up to the desirability of preserving and protecting their antiquities, which are numerous and of great historic value. Such monuments, once destroyed, cannot be replaced.

DEATH OF GEORGE ARMSTRONG.—Mr. George Armstrong, who has been Acting Secretary of the Palestine Exploration Fund since 1887, died on January 7 of this year. He has been directly connected with research in Palestine since 1871, when he was sent out on the "First Survey Party" for Palestine under Captain Stewart of the British army. Since 1887 he has devoted himself entirely to the interests of the Palestine Exploration Fund and his faithful and efficient services will be greatly missed.

THE SIZE OF THE EARLIER PARTHENON.—Mr. B. H. Hill, director of the American School at Athens, has concluded from excavations that Professor Dörpfeld's suggested reconstruction of the building on the site

of the Parthenon which was destroyed in the Persian invasion (480 B. C.) was not satisfactory. He considers that the building was smaller than Dörpfeld's reconstruction would indicate, being only 16 by 6 columns.

MR. MACALISTER BECOMES PROFESSOR OF CELTIC ARCHÆOLOGY IN DUBLIN.—Mr. R. A. Stewart Macalister, so long engaged excavating at Gezer for the Palestine Exploration Fund, has been appointed to the professorship of Celtic Archæology at the National University of Ireland in Dublin. Dr. Duncan Mackenzie, who has been connected with the British School of Archæology at Athens, will be Mr. Macalister's successor in the exploration work of the Fund. A new site is to be excavated as soon as permission can be obtained.

STONE MONUMENT OF III CENTURY FROM ASIA MINOR.—At the January meeting of the Society of Antiquaries of Scotland, Mr. J. Graham Callander described a carved stone monument of about III century discovered by Professor T. Callander and himself in a Kurdish district southwest of Angora, Asia Minor. Among a number of designs upon it were representations of the mirror and comb, similar to the symbols so commonly sculptured on the early Christian monuments of Scotland.

BONI RESIGNED FROM COMMISSION FOR THE ZONA MONUMENTALE.—“Commendatore Boni has resigned his membership of the Commission for the Zona Monumentale because the Italian Government declines to excavate the district between the Porta Capena and San Sebastiano, but insists on quadrupling the roadway. Commendatore Boni naturally regrets a decision which means the definite abandonment of the scheme for reviving the ancient glories of the Via Appia.” [*Antiquarian*, London.]

MOULD FOR COPY OF THE ATHENA PARTHENOS.—At the March meeting of the American Archæological School at Athens, Professor D. M. Robinson read a paper dealing with a mould for making terra cotta statuettes found at Corinth during 1908. It represents the head and bust of the Athena Parthenos of Pheidias. It gives the ornaments on the helmet and supplements the evidence of other smaller copies. The facial expression is very attractive and probably comes nearer the original than any other known copy. Professor Robinson attributes it to the Hellenistic Age.

TO PRESERVE THE LIBRARY OF PRESIDENT HAYES.—The Ohio State Historical Society at its meeting held in Fremont, formally accepted the offer of Colonel Webb Hayes, of the Spiegel Grove property, near Fremont, O., and a fire-proof building to house the library of the late President Hayes will be built on the premises as one of the conditions.

The beautiful park consists of 25 acres and it was the original intention of Colonel Hayes to donate 10 acres. Later he offered an additional 10 acres and also gave the Society a deed for the 5 acres upon which the Hayes

mansion stands. This is conditioned upon the right of the Hayes heirs and a caretaker to perpetually occupy the residence, the heirs to pay the expenses of the caretaker.

SOME DOLMENS IN FRANCE.—In a paper before the Anthropological Institute (London), on *Some Dolmens of Peculiar Types in France and Elsewhere*, Mr. A. L. Lewis drew the conclusion that the building of dolmens was not confined to one race and the building of circles to another and that no one race originated or diffused both; but that megalithic construction was a phase of culture through which many races passed, and which was developed in various ways, not only by separate races, but by different tribes, without regard to any racial differences between them.

DEATH OF CYRUS THOMAS.—The recent death of Professor Cyrus Thomas has removed one of our eminent authorities on the history of the North American Indians. He was educated as a lawyer and as a clergyman but since 1869 he devoted himself to science, first as geologist under Hayden in his survey of the western Territories. Later he became state entomologist for Illinois and in 1877 a member of the United States Entomological Commission. In 1882 he became connected with the United States Bureau of Ethnology and has written extensively on the historic and prehistoric inhabitants of North America.

FRAGMENT OF THE SERVIAN WALL LAID BARE.—A portion of the "Servian" wall at Rome has recently been made visible for a greater extent by the demolition of the Villa Spithöever on the Quirinal Hill. It is composed of smaller blocks than usual. They are almost slab-like, being one or one and a fourth feet high, of green-gray tufa, called capellaccio. This material is found in buildings of the V century B. C., as in the foundations of the temple of Castor and Pollux, of Saturn and of Apollo. Similar walling has been encountered in other parts of the wall; possibly this was the original style of the wall and the two-feet-high blocks belong to the reconstruction after the sack of Rome by the Gauls in 390 B. C.

A HITTITE BOUNDARY STONE.—There are two stone lions, probably of Hittite origin, which stand between Albistan and Darendá, two towns on the border between Asia Minor and Syria. Sir William Ramsay and Mr. Hogarth considered these as marking the entrance to an edifice of some kind. But, as there are no remains of any building to be found Guillaume de Jerphanion thinks that some other explanation is necessary. By carefully studying the ground he found that the lions are on the watershed between the Tokma Su and Euphrates on the north and the Seihun on the south. As they face towards the north and are about 5 yards apart he concludes that it is more than probable that "they once stood at the two sides of the road leading from Marash and the Albistan Plain northward to Darendá and the Gurun district." They now mark the dividing line between the *vilayets* of Sivas and Aleppo. The conclusion that these are old boundary stones is strengthened by the tradition, current among the native inhabitants, that these stones mark an ancient boundary.

FURTHER EXCAVATIONS OF THE "RED HILLS."—During 1908 and 1909 the "Red Hills" in Essex, England, were further investigated. In the first of the two seasons a mound near Maldon was excavated, revealing several flues and fire-floors, a kitchen-midden, pottery, animal bones and oyster shells. These are unusual finds in this class of mounds. Investigation showed that the cause was a subsequent occupation of the site by the Romano-Britons. These remains were confined to a definite region on the edge of the earlier mound, partly overlapping the original deposit of red earth. In the red earth were quantities of the objects, made of clay mixed with grass, to which the term "briquetage" has been applied. A human skeleton was found at the base of the original deposit. Few domestic relics were present, only a few fragments of late Celtic pottery.

In 1909 work was carried on in the marshes near Canewdon, where there is a group of small mounds, only 50 to 80 ft. in diameter. They are close together and not arranged on the line of the water's edge. This is unusual. The largest of this group was excavated, but the results were disappointing, as the mound was composed of burnt earth, with hardly any relics—a few pieces of "briquetage" and fragments of late Celtic pottery. There was nothing to show the nature of the industry which produced this mass of burnt material.

RESTORATION OF PALÆOLITHIC MAN.—Richard Swann Lull, of the Peabody Museum at Yale, has attempted to restore in plastic form the type of mankind living in Europe during the palæolithic period. The figure is life-size. The restoration is only tentative and may be changed to meet the requirements of further discoveries and opinions of experts. His model is based largely upon the "Man of Spy No. 1," one of the two specimens found at Spy in Belgium. The illustrations of the remains of man found at Krapina, in Croatia, were also used, together with other measurements. Professor Lull conceives *Homo primigenius* as low in stature, about 5 ft. 3 in. tall, but of great physical power. The torso he represents as clean-cut and athletic, similar to the North American Indian's. He indicates great strength in the upper portion of the trunk and arms to compensate for the lack of tools and weapons.

He represents the knees as somewhat flexed, as the curved thigh-bones would indicate, and the trunk as only partially erect, for the inward curves of the backbone are but feebly developed. The shin is short, and the great toe somewhat off-set.

The eyes are deep-set; the forehead low and flat; the nasal bridge broad and concave; the jaws somewhat prognathous. The lower jaw is deep and powerful, but lacks the prominent chin of modern man. The contour of the jaw is based upon the actual measurement of one of the Krapina specimens.

CAUSEWAY ACROSS THE DEAD SEA.—Mr. A. Forder has recently examined the evidence of an ancient causeway that is reported to have once connected Lisân with the west shore of the Dead Sea. From his observations and enquiries he concludes that the "ancient road and causeway ran almost direct from the outlet of the Wady Kerak across to the Wady Im-

bughugh: this is what might be expected, for an abundant supply of cold clear water is found in both these valleys, and, in such a region, both man and beast would need such provision." Although there is no sign of the crossing now, he found many old Arabs who remembered when the water was 6 or more feet lower than it is now and so shallow at this point that camels and mules were driven across through the water while sheep, goats and men crossed on the causeway. His Arab guide told him "that when the hair first appeared on his face, it [the place where the causeway existed] was so narrow that the people of his tribe used to sit on the edge of the Lisan and parley with Arabs from the west as to the return of cattle that had been stolen by one or the other of the parties." He said that if he had a boat he could row out on the Sea directly over the old causeway.

ROMAN CAMP NEAR NUMANTIA, SPAIN.—During 1909, Professor Adolf Schulten excavated a large Roman camp about 4 miles east of Numantia, Spain. He finds that the fortification was built by the Consul Fulvius Nobilior in 153 B. C. and that the catastrophe of Mancinus took place here. The fortifications are well preserved, 2300 ft. long by 1000 ft. broad (700 m. by 300 m.) and contained barrack accommodation for a legion and auxiliaries. The walls, of local limestone held together by clay, are nearly 3 ft. thick with towers every 100 or 140 feet. There were 5 gates guarded with towers. All the material parts of a Roman field-fortress are traceable. Rows of annexed buildings stretched to the west and south-east of the main camp to a length of 1860 yards (1700 m.). The orientation of the buildings is east facing the quarter where the sun rises at the end of August, which agrees with the statement of Appian that the camp was begun 3 days after the defeat at the battle of Vulcanalia, 26 August, 153 B. C. On a neighboring hill remains of a second larger and later camp were found which was 875 yards by 550 yards (800 m. by 500 m.). It consisted of a circuit of walls flanked by towers and bastions, but without barracks.



AN OLD COLONIAL AQUEDUCT

Some 15 kilometers from the City of Mexico, just beyond the railway station of San Bartolo Naucalpan, is the shrine of Nuestra Señora de los Remedios, our Lady of Succour, situated on the hill of Totoltepec. A short distance from the church is a stone aqueduct of some 46 arches which, presumably, was intended to carry water from a reservoir in the hills to the west across a deep ravine. This structure dates back to the early colonial days of Mexico and is of most admirable construction. The arches are $2\frac{1}{2}$ meters in the clear and at the deepest part of the ravine about 25 meters high. At either end are stand pipes, also of masonry and as solidly constructed as the arches, about 18 meters high, through the center of which from base to top runs a glazed earthen tube 12 centimeters in diameter. The channel in the aqueduct is 45 centimeters wide by 30 deep. It was probably the intention of the builders to cover this over, thinking



DIFFERENT VIEWS OF THE OLD AQUEDUCT NEAR THE CITY OF MEXICO

that they could thus bring the water across the ravine; but they had nothing strong enough to withstand the pressure, so the work went for naught.

The top of the standpipes is reached within by a *caracol*, or spiral stairway; the stones forming the tread of the steps are very much worn, bearing witness to their great age. These towers are built in courses, their diameter diminishing with the height. There are 7 of these courses, the diameter of the lowest being about 5 meters and of the top something less than 1 meter. The height of the 4 lower courses is 2 meters each and of the balance about $3\frac{1}{2}$ meters each.

A. L. VAN ANTWERP.



DEATH OF COLONEL C. R. CONDER.—In the death of Colonel C. R. Conder, R. E., LL.D., which occurred on 16 February of this year, the Palestine Exploration Fund lost another of its active members. He has been connected with Palestine research for many years, having taken up his work there shortly after Mr. Armstrong reached Palestine, on the "First Survey of Palestine."

DEATH OF DR. J. H. HAYNES.—After more than a year of ill-health, Dr. J. H. Haynes died at his home in North Adams, Mass., on 29 June, 1910. He had a remarkably varied career and is entitled to more credit than he has received for his archæological work. Dr. Haynes was born in Rowe, Mass., 27 January, 1849, and when he was 21 years of age, came over the mountain dragging his personal belongings on a hand sled behind him, to attend Drury High School. He was graduated from there and from Williams College in 1876, and taught in several towns in the western part of his native State. An offer from W. J. Stillman, correspondent of the *London Times*, to accompany him on an expedition to Crete resulted in his leaving the profession of a teacher and branching into what became his life work. He went with the American expedition to Assos and was for three years tutor in Roberts College, Constantinople.

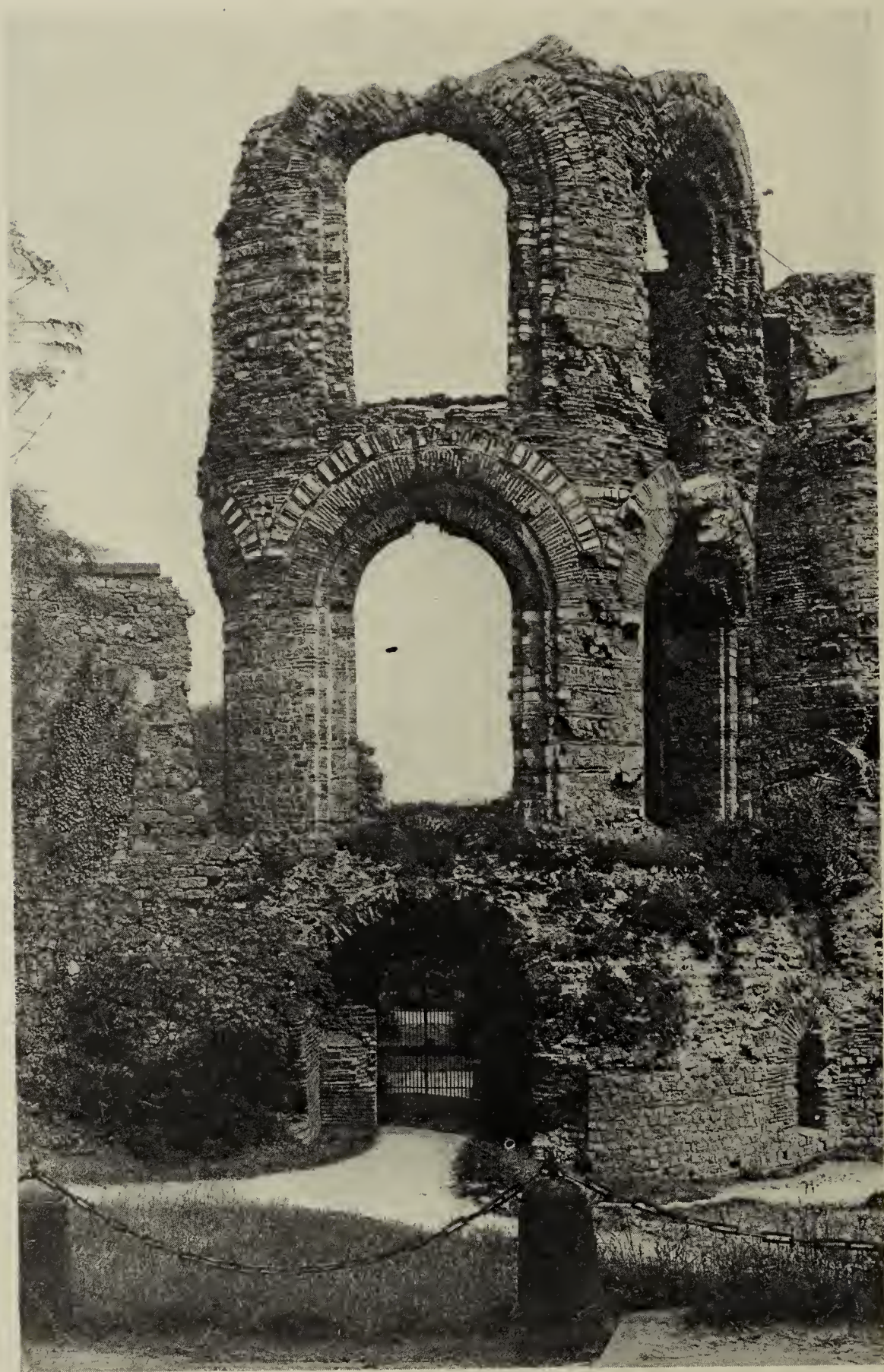
In 1884 Dr. Haynes went as manager of the Wolfe expedition to Babylonia, which remained out a year, and then went to the Central Turkey College at Amtal, where he remained as a teacher and treasurer of the institution until 1888. His training was by this time valuable to such an expedition as went out under the direction of the University of Pennsylvania in 1888, and he accompanied this and the next expedition as business manager, assuming charge as director of the expeditions of '92 and '98. During the time between the second and third expeditions Dr. Haynes was United States Consul to Bagdad.

It was upon his notes and his photographs that the world depended for its knowledge of this important exploratory work. He was the first man to stay through the Babylonian summer at work in the trenches by day and by night developing photographs in his "mud castle" or carefully packing and guarding the thousands of utensils and tablets that were recovered under his direction.

He found the oldest arch known to the world, about 4,000 B. C.; literary records of the life of 6,000 years ago, school exercises, outline maps, logarithm tables, water conduits, pottery, business accounts, and "Bible" stories that dated back of the Hebrew civilization. For three years during the fourth expedition, with the exception of a few months, Haynes lived alone in that country without seeing a white face in the midst of warlike tribes who warred among themselves, deserting the excavation trenches for the war dance and often threatening his life.

His modest statement a few weeks previous to his death, in which he claimed the credit that he so well deserved in connection with the finding of the so-called "temple library" at Nippur, was characteristic of his modesty and his unselfishness. He sunk his own glory in his earnest devotion to the cause of archæology in Babylonia.





TOWER OF THE ROMAN PALACE AT TRIER

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MAJESTIC TRIER

MORE than any other country of Europe, Italy alone excepted, Germany retains the traces of her earliest civilization and best preserves the memorials of "the grandeur that was Rome." One might at first think that France, the famous Gaul of history, which, with Spain and Italy, the two other Romance nations, has received her very language from classic origins, might seem to be the guardian of the old traditions, the connecting bond between the cultures of the ancient and the modern world. Indeed, in the realm of architecture, nowhere could one find nobler or better-preserved relics of Roman civilization, finer illustrations of Rome's power and majesty than in some of the French cities to-day, such, for instance, as in Avignon, Nîmes and Arles, or in the districts of Provence and the ancient Languedoc and Dauphiné. But, strikingly impressive as these memorials are, and curiously as such mighty and ever-present historic objects have aided not only in establishing later types of architecture but even in moulding the very life of the peoples of Southern France, still the influence of Roman civilization has penetrated through the centuries as deeply, if not even more so, into the composition of German thought and culture. From the time of the great Charlemagne, all through the Middle Ages, the flitting phantom of the Holy Roman Empire attracted Germany and ceaselessly lured her on. To establish a great world-power, with Rome, the ever-old, the ever-young, at its head, was the dream of the greatest of the mediaeval German emperors, of the mighty Ottos, of Frederick Barbarossa and of some later rulers. At this

very day much of German law and many a German custom, but (interesting above all to a student of art) many of the finest examples of historic German architecture can be traced directly to classic prototypes. No one can notice carefully such great Romanesque basilicas as the cathedrals of Mayence, Worms, Speyer, or the Minster of Bonn, or study indeed the architecture of all North Germany without perceiving that, indigenous as the famous "Thirteenth Century Style" of German architecture might be, it yet followed in its basilical constructions ancient Italian examples.

The city of Trier, or Treves, which stands upon the Moselle river 86 miles south of Cologne, possesses the grandest and most imposing Roman remains of Germany, and indeed of all northern Europe. Even Rome herself, vastly richer of course in such memorials of the imperial period, still has no more astounding relic than the Porta Nigra, or the ruins of the great amphitheatre of Trier.

This Porta Nigra is "a stone colossus which is unique in Germany." It is undoubtedly one of the examples of Roman work, its stupendous size, its very massiveness, and its method of construction would sufficiently attest this, but certain recent scholars insist that there are indications which point it out as belonging to the Merovingian period. One writer says: "The Porta Nigra was formerly a fortified city-gate, constructed on the most colossal proportions of reddish sandstone, its huge blocks being held together, not with mortar, but with iron clamps. If the enemy succeeded in storming the outer gate, he found himself in an enclosed courtyard, yet outside the main stronghold, and in a most perilous position. Only one of the two towers now stands at its full height, 193 ft., the uppermost story of the other being wanting. Two doors lead into the building, and are the only openings on the ground floor. No particular order seems to have been observed in the arrangement of the pillars, and at the present time the whole gives an impression that the building was never completed." As this famous stronghold has become blackened with age it has gained the name of the Porta Nigra, though it is sometimes unfamiliarly called St. Simeon's Gate.

The great amphitheatre of Trier still preserves its outer wall to a height of 6 or 7 ft., while the cages of the wild beasts and rooms for the gladiators can still be distinguished. The Roman Baths, on the other hand, which have been recently excavated and which are some 600 ft. in length, may have formed part of an extensive palace, though but little remains above ground. Another very important relic is the Roman Basilica in Trier, which is assigned to the reign of Constantine. It is "one of the special class of Roman monuments intended for the administration of justice and the convenience of trade. The monument has been put to various uses since the Roman day, and is now a Protestant church. It is built entirely of brick in the form of a rectangular hall with a large semicircular apse at the north end." The interesting market-cross, said to have been built 958 by one of the archbishops of Trier, stands in the middle of the city's square, upon Roman foundations. A curious classic monument is also the Igeler Pillar, an obelisk-like structure more than 70 ft. in height, and upon which memorial are carved the names of the dead of several noble Roman families. It is situated about 7 miles from Trier. These great structures and extensive



ROMAN AMPHITHEATER

ruins in Germany, like the temples of the Roman Forum, or the tombs of the Eternal City which lined the Appian Way, speak impressively of the pride and magnificence of Rome's imperial age, a pride which, as instanced by the above-mentioned tombs, extended even beyond the grave.

Trier claims to be the oldest city in Germany. While a mediæval legend inscribed upon the old Rothes Haus inn tells of the city's foundation 1300 years before Rome's beginnings by Thebetas, a king of Assyria, we know in reality nothing of Trier's record before the time of the Treviri, who were of Teutonic, or perhaps Celtic stock. Julius Caesar conquered them in 56 B.C. and spoke of them as a warlike people "with the best cavalry in Gaul." The Emperor Claudius probably founded the Roman town, which was called *Colonia Augusta Trevirorum*. It early became a place of great wealth and importance. The poet Ausonius, writing his *Mosella* in the IV century A.D., speaks of the city as the second metropolis of the empire, or, "Rome beyond the Alps." Trier became the capital of *Belgica Prima*, and a favorite place of residence of Constantine, Maximian, and other Roman emperors. In its above-mentioned amphitheatre, which could hold 30,000 spectators, Constantine caused several thousand Franks and Bructeri to be put to death for the amusement of the populace. During the imperial period many public buildings and several palaces were constructed, while extensive villas occupied the surrounding hills. But the passing of all this magnificence came when Attila, in 451—in which year he also destroyed Mayence—laid the city in ruins. In 465 the city came into the possession of the Franks, and became the chief town of Austrasia. "The Merovingians often resided here, as did also Theodoric, Theodobert and Sigbert."

Trier, however, assumed a second importance during the Middle Ages. Among the 7 electors of mediæval Germany were the three archbishops of

Cologne, Mainz and Trier; the ancient town therefore as an electorate and famous see became again a powerful city. Indeed one of its bishops, Baldwin of Luxemburg, the "Lion of Treves," had so much influence and exerted himself so successfully that he caused his brother Henry VII to be crowned emperor. All through the Middle Ages the "Sancta Civitas Trevirorum" advanced with a steady growth and became a very famous city, although it was never one of the free cities of the country. It possessed excellent monastic schools, while its university existed until 1798. With the transfer of the electoral residence, however, to Coblenz, in 1786, Trier began to decline.

The earliest churches of the city, placed however outside the walls, were those of Sts. Eucharius, Maximin, Paul and Matthew, all which buildings have since been reconstructed, while some have been turned over to other uses. The "holy coat of Treves," said to be the seamless garment worn by Christ at the time of the crucifixion, and which was said to have been presented to Trier by the Empress Helena, Mother of Constantine, is one of the cathedral's famous relics, and has attracted many pilgrims at various times.

The cathedral of Trier, designated by Lübke "the most important example of pre-Carolingian building in Germany" is one of the great historic buildings of Europe. "It is especially remarkable from the fact that the original design of it was, without question, the Roman basilica, although it owes its creation to Christianity, and that all the bishops, until the XVII century, continued to work at it. Valentinian I built a tribunal hall at this place, in which religious services were held when Christianity was introduced." And Dr. Von Reber in his *History of Mediæval Art* calls especial attention to the fact that the western façade of the cathedral "has classic pilasters with distinct reminiscences of the details of the Porta Nigra." And the same writer says again in regard to some of the oldest examples of German architecture: "Decidedly the most important Rhenish works of this earliest period were the cathedrals of Mayence and Treves, some parts of which, remaining to the present day, may without doubt be referred to the age of the horizontally ceiled Romanic basilicas." Dr. Von Reber also writes in the most interesting way in regard to the three great granite pillars (a fourth having fallen in the XI century) which still stand in the interior of the cathedral of Trier. He says that it is impossible to tell whether these columns are "a part of the first construction, assumed to be as early as A. D. 330, or were introduced in the rebuilding of this church by Bishop Nicetius, between 534 and 565. The same is the case with the rough Corinthian capitals surmounting the pilasters which correspond to these shafts." The passing of a few centuries more or less seems of small importance in the face of this cathedral's antiquity. This venerable Romanesque edifice, one of the largest and finest in all Germany, was reconstructed in the year 1010, while the western façade was rebuilt in 1047. As was said above, some restoration has been occasionally necessitated since that time.

Adjoining the venerable cathedral, and, Professor Hamlin tells us, "built on the site of the ancient circular baptistery at Treves," is the Liebfrauenkirche, the church of Our Lady. This structure, so wonderfully interesting also, interesting from being "the first purely Gothic church of



PORTA NIGRA



ROMAN PALACE

Germany," for Germany was slow to adopt the new style of architecture, was built 1227-1243. Its builder, who may have planned also the cloisters of the cathedral, followed French models, but the result proves nevertheless that he had an individuality of his own. This church is concentric in form, and has also an apse, while the main structure is surrounded by polygonal chapels.

He who would gain a better idea of the strength and majesty of the vanished Roman Empire, the extent of her rule, and the completeness of her sway, must visit the most distant boundaries of that empire: the old cities and towns of Germany and above all this wonderful city of Trier.

ADELAIDE CURTISS.

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ARE THERE ENGLISH WORDS ON THE KENSINGTON RUNESTONE?

IN part I, volume IX of RECORDS OF THE PAST, is an introductory article on the Kensington Runestone by Dr. Warren Upham, Secretary Minnesota Historical Society. This stone was found near Kensington, Minnesota, in 1898, and in an inscription of 66 words in runic script, tells of an exploring trip of 30 Scandinavians to those parts in 1362.

Copies of this inscription have been sent to most of the scholars experienced in this line of study, both in this country and abroad. Some of these scholars have pronounced the inscription genuine, while more claim it is spurious. The reasons for this latter belief are diverse and others or less weighty. One argument is, however, advanced in common by all who disbelieve the inscription, and is emphasized by most as being the chief proof of its forgery. This is that the inscription contains a number of English words which show it to be the product of some Scandinavian American of the present day. These English words are *from*, *dhedh* (dead), *illy*, (ill), *of vest* (of the West) and *mans* (supposed to be an erratic plural form of *man*).

In order to make plain the significance of these words in the inscription, I give below a transliteration of the inscription, in which these words are given in heavy type, followed by a translation.

8 göter ok 22 Norrmen þo opdhagelsefärd fro vinland of vest Vi hadhe läger vedh 2 skjär en dhags rise norr fro dhenno sten vi var ok fiske en dhagh äptir vi kom hem fan 10 man rödhe af blodh og dhedh A V M fräelse af illy.

har 10 mans ve havet at se üptir vore skip 41 (or 14) dhagh rise from dhenno öh ahr 1362.

The translation is as follows:

"Eight Goths and twenty two Norwegians upon a journey of discovery from Vineland far westward. We had camp by two skerries one day's journey north from this stone. We were out fishing

one day; when we returned home we found ten men red with blood and dead. Ave Virgo Maria! Save us from evil!

“(We) have ten of our party by the sea to look after(or for)our vessels forty-one (or fourteen) days’ journey from this island. Year 1362.”

I have put some study on the language of this inscription, but I cannot find that any of these words are English. On the contrary, I find them all to be such rare old Scandinavian words that their presence in the inscription more than any other internal evidence speaks strongly for its genuineness. This conclusion will be amply demonstrated in the following discussion:

From. This preposition (English from) occurs three times in the inscription. Twice it is spelled correctly *fro*, but the third time we have the criticized form *from*. Seeing the writer has twice shown that he is familiar with the correct form, it is not reasonable to suppose that he in the third instance should have forgotten his native form and substituted a foreign word. Especially as prepositions and conjunctions are the last words of a language to be conquered by a foreigner. A much better and perfectly satisfactory explanation is found in an obscure passage in Torp’s and Falk’s etymological dictionary. Discussing the preposition *fra* (same preposition, modern spelling) it adds that the form *fram* in meaning of *fra*, occurs sporadically in Old East Scandinavian (that is district East of Christiania fjord)¹. These philologists here spell the word *fram* while upon the stone it is spelled *from*. But the sound value of this long vowel has always been so indefinite that even at the present day it is sometimes expressed with an *a*, sometimes with *aa*, and sometimes with *o*, according to local usage.

From another source we have further evidence which moreover shows that the spelling is in good form. In Aurland parish, Sogn, Norway, was an ancient church, built according to Professor Dietrichson,² many hundred years ago. This church was lighted by a series of small ornamental windows of fantastic design, in the middle of which was inscribed

From
Niels Erickson
Flumb
Ole Knutsön
*Ibidem.*³

This shows, apart from Torp’s and Falk’s indubitable evidence, that the preposition *from* was in use in Norway several hundred years ago, in the same sense as upon the stone. The writer used the two forms *fro* and *from* side by side as we today frequently write *on* and *upon* side by side. At the time the stone was found nothing had yet been published which showed that this form of the preposition had ever been in use in the Scandinavian countries. The writer, if a forger, could not therefore have gotten this distinctively archaic touch from any learned work.

¹ *Torp og Falks Etymologisk Ordbog*, Christiania, 1906.

² Dietrichson, *Norske Stavkirker*, Christiania, 1892, p. 474.

³ The above is attested by several persons in whose homes these old windows for a time did service, when new ones were substituted in their place in the church. See *Skandinaven*, March, 1899.

Of vest. The word *of* in the sense used here is a particle of a peculiarly evasive, yet broad significance, whose equivalent does not exist in English. According to Fritzner⁴ it "could in Old Norse be coupled with any adjective or adverb whatsoever," and the significance, action or direction of the principal word would then be intensified to a superlative degree. It still remains in common use in the Norse tongues, but now superficially unrecognized as an inseparable prefix, as for instance: *afgjöre*—to settle definitely; *afstorme*—to carry by storm; *afdal*—a deep valley, etc. In the literature of the XIV century and earlier, it is however often met with as a separate particle, and its occurrence then in most cases seems very quaint and archaic. The following are illustrations of its use in the old literature:

Saga af Olafi Hinom Helga, written ca. 1220 says:

*Kom tha that upp at Thorir hafdi of lausafiar.*⁵

"Came then that up that Thor had very great treasures."

*Knutr hinn Riki hafdi of lids oc skip furdoliga stor.*⁶ "Canute the Great had a mighty army and amazingly big vessels."

Kalfr svarar: fullgert hefir ec that ef ec hefi ecki ofgert at beriaz vid vora landsmenn.

"Kalf answers: 'I have done that fully if (perchance) I have not done it too much, to fight against our contrymen.'"

With this understanding of *of* the phrase *fro Vinlandh of vest* should be translated "from Vinland very far West." An exactly similar case where this particle governs an adverb of direction is found in the modern Norse word *afsides*, meaning "very far to the side."

Of vest has therefore nothing to do with the English "of the West." The use of this particle as illustrated above was very common in the XIV century, and its felicitous use in the inscription speaks strongly for its genuineness.

Illy. Opponents of the Runestone have urged that this word is a disguised form of the English word *ill*. The clause in which it occurs would then translate "save from ill!" This is not only a wretched translation, but it is very superficial criticism. The root *ill*, meaning evil, occurs innumerable times in the Scandinavian literature of the XIV century, with a variety of unaccented endings, such as *illa*,⁸ *illä*,⁹ *illir*,¹⁰ *illt* and *ills*.¹¹

The best illustration of the entire propriety of this word and the phrase in which it occurs is found in an old Norse folk-song, which has just been published. This ballad goes back to the time of the Black Plague (A.D. 1349) of which it tells and is full of ancient expressions. I give the first

⁴ Fritzner's *Ordbog over det Gamle Norske Sprog*, Christiania, 1886, Article *af*.

⁵ Snorre Sturlason's *Kongesögur*, Holmia Ed. 1817, vol. 11, p. 271.

⁶ *Op. cit.* p. 294.

⁷ *Op. cit.* 436; see also p. 350—*ofr fe*—"too much gold;" and pp. 366 and 345. A number of excellent illustrations are also to be found in *Svenska Medeltidans Rimkrönikor*, Klemmings Ed., Stockholm, 1865 First part, 11, 623, 1368, 1633 and 3078.

⁸ Brandt's *Gammeldansk Læsebog*, p. 56, line 16.

⁹ *Gamle Kong Eriks Krönike*, 11. 3481, 1055, 2349.

¹⁰ Olaf Trygvesson's *Saga*, Ed. 1817, Holmia, vol. x, chap. x.

¹¹ *Op. cit.* pp. 142, 227.

stanza below, and will call special attention to the last two lines, which, with a slight variation, serve as a refrain throughout the ballad:

*Svartedauen for laand aa straand.
Aa soþa so mangei tilje,
De vi eg no fer sanno tru,
De var kje me Herrens vilje.
Hjälpe oss Gud aa Maria Möy,
Frele oss alle av illi!*

“The Blank Plague sped (over) land and sea
And swept so many a board (floor).
That will I now for surely believe,
It was not with the Lord’s will.
Help us God and Virgin Mary,
Save us all from evil!”

Here, as will be noted, we have not only our *illy* phonetically reproduced but we have literally the same prayer as on the stone, plus the redundant *oss alle*. Besides that, we find both petitions are addressed to the Virgin Mary—*Ave Virgo Maria*, rather than *Ave Maria*, which was common in the period preceding this. Finally both prayers use the ancient preposition *af*, which has long since been superseded by *fra*. Instead of finding this word English we find it and its context in most perfect agreement with the usage of the XIV century, as illustrated in this old ballad now for the first time published, years after the Runestone was found.¹²

Dhedh. This word looks at first sight very much like our English word *dead*. But apparent similarities are a pitfall which has tripped up many an investigator. The proper Scandinavian word which we would expect here is *död* or *dhödh*. The difference is therefore between the *e* and *ö*.

Now I find that the sounds of the letters *e* and *ö* were in the XIV century so similar that even the ablest writers of those times often fail to differentiate between them. The author of *Gamle Kong Eriks Krönike*, the ablest work of several centuries, permits them time and again unnecessarily to rhyme as for instance:

*Sidhan foro daner ather heem
Ok Kong Waldemar fölgde thöm.*¹³

This is not a case of poetic license, for he uses *them*, the proper spelling of the word, interchangeably with *thöm* in the same paragraph.¹⁴ Even Queen Margaret and her clerks write *them*, *thöm* and *thom* in the same letter. Examples of this interchange of *e* and *ö* are so numerous that it is

¹² This folk-song was communicated by Mr. Olav Tortvei, Moorhead, Minn. to Mr. Torkel Oftelie, a folk-lorist of Fergus Falls, Minn., by whom it was printed in *Telesoga*, No. 1, 1909. Mr. Tortveit was an octogenarian pioneer, now dead, who, though illiterate, remembered hundreds of old ballads he had heard in his childhood. Mr. Oftelie sent this ballad—*Förnesbronnen*—to the eminent folk-lorist Rikard Berge of Telemarken, Norway, who said he had not met with it in his researches.

¹³ Klemming’s Ed., first part, ll, 950, 951; also see ll. 1802, 1803.

¹⁴ *Op. cit.* ll, 904, 925.

clear that the author of the inscription in writing *dhedh* for *dhödh* only illustrates the frequent inability of XIV century writers to distinguish between the two. According to Professor Noreen of Upsala, this dialectic substitution of *e* for *ö* is common in certain parts of Sweden even today.¹⁵

The above remarks show that *e* was frequently written for *ö* and vice versa by the uncritical writers of that time, which explains the occurrence in the inscription. Such a mistake would however be quite impossible in a modern writer having some knowledge of spelling and philology. As the author of this inscription, if false, must have been a consummate linguist and philologist, he would never have committed this mistake.

Mans. Many have objected to this word as showing that the author was a Scandinavian American, who attempted to express *men* by adding *s* to *man*. To others the word as it stands has been meaningless. It has been a puzzle to all.

If the spelling *mans* indicates the runemaster's conception of the proper plural form of man, it may not be amiss to inquire why did he not use this spelling in his earlier use of the same word? This substantive occurs twice, both times in the objective case, and preceded by the numeral 10. First time it is, however, spelled properly enough *man* (this spelling occurs side by side with the older form *menn* in *Flateyrbok*, written 1380¹⁶ and later became the established literary form (*mand*)).

The reason why this word in once spelled *man* and another time *mans* is far from meaningless, and lies far deeper than an ignorant display of impossible English.

The substantive *man* had three meanings in the old Norse. The first, where it was, and still is, used impersonally, has nothing to do with this discussion. The second meaning refers to man as an individual. This is the meaning of the first *man* in the inscription. When this was preceded by a numeral, it sometimes took the genitive, but more often the accusative case. In the inscription it is given in the accusative.

The third meaning of *man* may be approximately translated by people, household, party. A much more precise rendering is given by the modern Norse word *folk*. In this meaning the word was used only in the singular and when preceded by a numeral or any word expressing a quantity always took the genitive. This is the sense in which *mans* is used in the inscription, and the clause may be loosely translated by "we have ten of our party to look after our vessels," etc. The following are illustrations of this peculiar use of *mans*:

*Til Olafs Konungs kom her mans, haltir oc blindir,
edr a annan veg siukir.*¹⁷

"To King Olaf came an army of people, halt and blind, or otherwise sick."

¹⁵ Noreen, *Inledning til Dalmaalet*, pp. 8-9. A correspondent in Christiania informs me that he had found the same spelling of this word (*ded*) in an ancient Danish literary work, of 1390, but he neglects to give the proper literary reference.

¹⁶ *Flateyrbok*, Christiania, 1860, pp. 457, 501.

¹⁷ *Konunga Sögur*, vol. 11, p. 433.

*Eptir thesso aurbodi liop upp mugí manns, oc satti til Medalhusa.*¹⁸

“After this message ran up a crowd of people, and hurried to Medalhus.”

*Olafr Konungr war tha j nidarosi ok hafde med ser fiolda mannz.*¹⁹

“King Olaf was then in Nidaros and had with him a multitude of men.”

It is seen from this that the runemaster in telling of the ten dead men **thinks** of them as individuals and accordingly writes *man* in accusative plural. The second time he is thinking of the party as a whole, and accordingly uses genitive singular. This is a very fine point in Old Norse grammar, not yet discussd in any text book.

This brief discussion is sufficient, I think, to show that this inscription is not the work of some illiterate local wit, betraying himself by clumsy lapses into immigrant English. All the criticized words show the most perfect harmony with XIV century usage. I have pointed out that much of the material necessary to express these points was not available until after the stone was found. Yet even if it had been, the author, if a forger, must have possessed a familiarity with abstruse Norse grammar and expressions superior to the learning of all his critics combined. That such a prodigy of scholarship should have descended to such depths of dishonesty and imbecility as to have wandered far out into the wilds of Minnesota, before the advent of white settlers, and there chiseled a lengthy inscription which would bring him neither honor nor riches, is inconceivable.

[HJALMAR RUED, HOLAND.

Ephraim, Wis.



STONE AXE FROM PHEASANT BRANCH, WISCONSIN.—
In the April–July issue of the *Wisconsin Archeologist* Mr. Charles E. Brown calls attention to a fluted stone axe from Pheasant Branch, Dane County, Wisconsin. It is well formed, $9\frac{1}{4}$ in. long by 4 in. wide at the handle-groove. The groove passes around 3 sides; it is $1\frac{1}{2}$ in. wide, bounded by fairly prominent ridges. The two faces of the blade are convex and unornamented. The poll is ornamented with 6 well-defined parallel flutes, extending over the crown from front to back. They are about a half inch wide and rather shallow. Among several hundred ornamented grooved stone axes studied by Mr. Brown, only 22 have ornamented polls. Some of these have grooves radiating from the crown downward, others have concentric grooves, while still others are ornamented by shallow depressions. Fourteen are ornamented on the blade as well as on the poll. Mr. Brown after extended investigations outside of Wisconsin has come to the conclusion that these ornamented or fluted axes are a distinctive feature of Wisconsin archæology.

¹⁸ *Op. cit.*, vol. 1, 257. See also p. 198 and vol. 11, pp. 301, 334 and 390.

¹⁹ *Flateyrbok*, vol. 1, p. 310. See also p. 454.



THE GREAT PYRAMID AND SPHINX

A VISIT TO THE PYRAMIDS OF GIZEH

Part I

EVERYONE who goes to Cairo visits the citadel. This lofty rock commands a magnificent view over the city, the desert and far up the valley of the Nile. Of this wonderful panorama, the long chain of the Pyramids forms the most impressive feature. For a distance of 40 miles to the southward, as far as the borders of the Fayum, are outlined in the cloudless atmosphere those mighty tombs of the Pharaohs—the oldest and vastest cemetery in the world. Like the remains of a Titanic wall they stretch along the western bank of the river—for the west was the abode of death and darkness—on the very edge of the desert, in successive groups now named after the neighboring Fellah villages of Abu Roasch, Gizeh, Sakkara, Dahshur, Lisht, Illahun and Medum. Though so clearly visible, they stand quite apart from the surrounding landscape. The narrow strip of cultivated soil along the bank of the river approaches but never touches them. The solitude and silence of the desert brood over them. The noise of the great city at our feet falls on our ears, and its busy life moves beneath our eyes; but nothing breaks in upon the sense of mystery and separation from the existing world, which invests these hoary monuments.

The Gizeh group, directly opposite Cairo, standing upon a rocky plateau slightly elevated above the level of the surrounding sands, transcends all the others in grandeur and importance. Few pieces of ground in the world can lay greater claim to human interest than this tiny plateau, which is scarcely a mile in breadth. For here through decades of centuries down to our day have been preserved the very beginnings of architecture, and at the same time the most enormous piles of masonry ever erected, the accuracy and perfection of whose construction show the genius of the most able builders and the most wonderful mechanical and artistic skill. And besides these stupendous works of architecture, this little rock boasts also of the largest, if not the oldest piece of sculptured stone existing—the mysterious Sphinx, whose huge body and head are well in keeping with its gigantic neighbors. Such a wonderful assemblage of monuments as these three great pyramids and their eight satellites, together with the enormous Sphinx, the Cyclopiian walls of the ruined “Granite Temple” and the innumerable smaller tombs and ruins of pavements, causeways and walls, has nowhere else a parallel.

Our interest is increased when we reflect upon the mystery which for ages has shrouded these mighty works of man, and when we remember all the fantastic theories about them. For no other monument has been so much written about, nor the subject of so much controversy as the “Great Pyramid,” the monarch of this remarkable plateau. Men have exhausted their ingenuity in attempting to explain its origin and purpose; and just because it has been so familiar and yet so imperfectly known, it has proven all the more attractive and allowed the greatest diversity of opinion. It is but recently that the necessary scientific investigation has fully shown the skill of its builders and the errors of many who have described it. We can

no longer explain the pyramids as temples of the Sun or Moon; nor can we see in them astronomical observatories, nor refuges from the flood.¹ It was in the spurious itinerary of Antony of Piacenza, back in the VI century of our era that the belief, still held by fanatics down to the XVI century, was started that they were the granaries that Joseph built for the Pharaoh; but we now know that they could have had nothing to do with the Israelites, as so many have thought, for they were built almost as many centuries before the time of Moses as have elapsed since. A certain Frenchman imagined that they were built as barriers to protect the cities and valleys of lower Egypt from the sandstorms which sweep over the desert. But all such theories only excite our humor now; for, though there may be some things about the history of these monuments still obscure, and some details of their construction stimulating differing views, now there is no longer the slightest doubt about their general character. Just as the low flat-topped "mastaba" was the tomb of the Egyptian noble, so was the loftier pyramid the tomb of the king, who delighted in styling himself the "Son of the Gods," and was revered as a god himself, before whom all heads were bowed in the dust. And as he towered in majesty over his prostrate subjects in life, so, after death, was his sepulchre raised high over those of his proudest courtiers. The most imposing mastabas, before they became covered by the storms of sand ceaselessly beating against them, were insignificant enough beside their colossal neighbors.

The pyramid then was merely the abode of the royal mummy; a tomb whose sepulchral chamber was hidden away in the interior. It had long been known that no pyramid was to be found anywhere in Egypt except as the center of a necropolis, which alone should have been sufficient to reveal the sepulchral character of these monuments, even if it were not known that secreted somewhere within the huge mass of stone there was a chamber containing a sarcophagus. Each of these tombs once had its peribolus wall, its separate chapel and priestly college to perform the sacred rites in honor of the dead. They were ever visible to the proud Pharaoh, as he looked out over the western horizon from his palace windows in Memphis, a constant reminder that he too, notwithstanding his boasted descent from the gods, and the abject reverence of his countless subjects, must one day also experience the common lot of mortals, and have his earthly body moulder away in the gloomy interior of one of them.

Their characteristic form was doubtless derived from the prehistoric funeral mound of earth transferred to stone. Innumerable such tumuli, generally conical in form, are found scattered all over the old world from the Atlantic to Central Asia. The ancient Egyptians and Mesopotamians, in adapting them to masonic conditions, gave up the original shape and built these pyramidal structures with plane surfaces over square bases; the latter people raised them in terraces, while the Egyptians produced a purely geometrical figure with inclined plane faces. There was danger both from

¹ Masudi, an Arab historian, says that the "Great Pyramid" was built by Surid 300 years before the flood, because of a dream warning him of the impending catastrophe, and that the king therefore deposited within it his treasures and the bodies of his ancestors, and also the records of all the knowledge possessed by his priests for the instruction of those to come after.



PYRAMIDS OF GIZEH

the inundations of the Nile and from storms of sand from the Sahara. That the latter danger is a real one, is evidenced by the fact that the huge body of the Sphinx, had to be cleared of its mantle of sand three times during the last century, and also by the recent discovery of many tombs which had been completely hidden under layers of sand. So the Pharaohs, for fear that their tombs also might one day be submerged, were obliged to give them great height and smooth surfaces, where the sand could not lodge and where the waters could not destroy, for, in accord with Egyptian doctrines of the immortality of the soul, the earthly abode of the soul must last forever. Doubtless a simpler form would have been that of a tetrahedron, though no triangular based pyramid exists among the 70 or more of these ruined tombs in Egypt. But apart from the inartistic effect of a three-faced structure, doubtless it was also intended that the pyramids, like all other Egyptian tombs, should have one side face west, the abode of the dead, and another east, in the direction of the expected resurrection. In any case, with the exception of one at Sakkara, all are orientated to the cardinal points.

This characteristic of having four faces is, however, the only one common to all the pyramids of Egypt, as in every other detail they show the most surprising variation of form and structure. Thus in height they range from that of Khufu, which was originally about 487 ft., to that of the smaller ones at its base, erected by other members of his family, the highest of which is only 33 ft. While the "Great Pyramid" has an almost square base, each side differing by less than one ten-thousandth of its length from the others—one at Sakkara has an oblong base. There is likewise a great diversity of material employed in their construction; those in the Gizeh group are built of fine white limestone, while others, as those at Roasch and Dahshur, are

of unburnt brick; another at Illahun is composed of small stones cased over and held in place by a skeleton of brick walls inside. The number and locality of the mummy chambers are never uniform; there may be one or more such chambers inside the core masonry; or there may be one hollowed out of the solid rock beneath the base, as in the "Second Pyramid" at Gizeh, whose huge core, so far as is known, contains no room at all. Khufu's sepulchre, on the other hand, contains at least two chambers in the interior and one below the base. Though we are most familiar with the external form of those at Gizeh, owing to countless drawings and photographs, we must not suppose that all the royal tombs of Memphis show the same unbroken surface angles. There are some with angled ridges, as the "South Pyramid" of Dahshur, where the lower angle is $54^{\circ} 41'$ and the upper one $42^{\circ} 59'$, which makes it artistically very ugly, caused perhaps by a change in the plan, to curtail its size, while yet under construction. Another at Sakkara, also with angled faces, is still more distasteful to the eye, for it has blunt corners. Some false pyramids have their sides rising in the form of steps; the so-called "Step Pyramid" at Sakkara has 6 horizontally receding steps with slightly inclined faces, each being set back 7 ft. from the one below, while their heights progressively diminish upwards from 38 ft. 2 in. at the lowest step to 27 ft. 6 in. at the highest. It is also interesting for containing a labyrinth of passages and several chambers, besides a dome-shaped excavation in the rock beneath. The oldest dated pyramid of all, that of Sneferu, the father of Khufu, at Medum (though some date the "Step Pyramid" at Sakkara from the IV Pharaoh of the I Dynasty), presents the peculiar appearance of three square towers with slightly inclined faces, each a little less in area than the one below. This tower-like effect is merely an accident of its destruction, for it must have originally looked like the "Step Pyramid of" Sakkara, as is proven by the remains of the lower steps still buried in the débris at the base, and also by the mediaeval Arab description of it, which is still extant. These latter two, however, are not true pyramids at all, but are instead only cumulative mastabas.

Let us explain this more in detail. By a "mastaba" is meant a tomb of masonry with a flat top, and with its sides sloping inwards from the base at an average angle of 75° (the pyramidal angle varies from 50° to 55° , the "Great Pyramid" being $51^{\circ} 50'$), and therefore a structure having the form of a steep truncated pyramid or "bench," as the meaning of the Arabic word indicates. If such a structure be successively enlarged outwards, the central mass at the same time being carried upwards, and this process being repeated several times, a step-pyramid would result. Finished faces, similar to those outside, are known to exist as far in as near the middle of the mass in the example at Sakkara. But such mastaba accretions were never finally developed into straight-edged pyramids, by filling in the triangular steps with masonry. So the explanation of certain Egyptologists—notably of Lepsius, Perring and Mariette—and which is still found in many books on the subject, that all pyramids were the result of the slow growth of additions around an original mastaba, has little to support it. On this theory, their difference in size also used to be explained; for this was said to depend upon the length of the king's reign; for he would, they argued, begin by hastily



DR. HYDE'S PARTY IN THE DESERT OF SAKKARA—STEP PYRAMID IN BACKGROUND

erecting a mastaba over his sepulchral chamber, and then year by year slowly increase its size by adding successive envelopes of masonry. The facts, however, are against such a theory; the smallest tomb of the Sakkara group was built by Unas, a king who is recorded to have reigned for 30 years; another king, Pepi II, who reigned 90 years, built a pyramid in the same group, no larger than that of Marenma, who died early. Furthermore the accretion theory is destroyed by the arrangement of the interior passages in many pyramids, which would not fit structures originally planned on a very much smaller scale. The truth about the building of these tombs is doubtless this: a complete plan was laid out at the beginning, and followed, subject, only of course, to the resources at the command of the builder, which would depend upon the king's ambition, the internal economy of the country and other such circumstances. There is only one example in all Egypt of a true pyramid being enlarged during construction, that of the "Third" one of the Gizeh group, where the plan, however, was changed all at once and not by stages.

Some years ago I had the good fortune to visit Egypt, and before making the "Grand Tour" up the Nile, I visited Gizeh. The two hours carriage drive from Cairo is nowadays a most prosaic affair, down past the Viceroy's palace, over the imposing Nile bridge, and out along a charming road, slightly raised above the oft inundated fields, and shaded by palm and lebbek trees. Since my visit the journey thither has become even more

prosaic, for an electric tramway—strange anachronism in this oldest of lands—has been built. No wonder the lovers of the romantic and adventurous complain of such irreverent innovations, for of yore the journey was one of difficulty and even danger. The Nile used to be crossed by a ferry, and the rest of the way made on donkey-back, while an intervening canal was crossed by the traveler perched aloft on the shoulders of his Arab guide. We at least thought it would be a sacrilege to use carriages and so set out with our donkeys, the time honored Egyptian mode of travel.

The pyramids are ever in front of us, rising clear cut and impressive like distant hills breaking the monotony of the western horizon. As we come nearer, the effect is at first disappointing, as they seem actually to grow smaller. And how illusive the distance! Only half of the time allotted had passed, and yet we seemed almost at our destination. But we soon found that this was an illusion, due to the extreme clearness of the atmosphere and the fact that there were no intervening objects to break the expanse of plain, to mark the distance or enormous size of the pyramids. We find we are really only half-way there, and soon, as we draw nearer, they begin to loom even larger, and to take on a fairy-like appearance in their rich haze, which for a time robs them of all suggestion of unfeeling stone. At length, as we stand at the very base of the "Great Pyramid" and gaze upward at its enormous bulk, our expectations are fully realized. But the fairy vision has taken flight, for we are looking up at an unsightly mountain of stone, whose sides form giant stairways, their huge steps stretching upward seemingly into infinity, narrowing gradually until lost in a point far above us. When we realized that this enormous pile was of solid masonry, that hundreds of these steps were composed of blocks 200 cubic ft. in bulk, we were overcome with a feeling of awe. A sense of the utter disproportion between the insignificant powers of man and this colossus erected by his hands, overpowered us.

Of all the tombs of the ancient Pharaohs, this is the largest and grandest. It was reckoned one of the "Seven Wonders"² of the ancient world, and it is the only one of them all which has survived down to our time. And yet after the lapse of six millenia, it is the largest building in existence, one which, for mere size, has never had an equal. Its proportions are truly colossal yet, after it has been disfigured by losing its top and outer incrustation. It is three times as large as its nearest rival in size, the church of St. Peter in Rome. Its base is still about 750 ft. or nearly one-seventh of a mile in length; its height, though about 30 ft. have disappeared from its top, is still 451 ft; and its base covers an area of over 13 acres, a space equal to 4 ordinary city blocks together with their adjacent streets. No other structure ever contained such a mass of stone. The present content of the masonry, deducting for the interior rock projecting from beneath and the various passages and chambers, though formerly considerably larger, is computed now to be about 85,000,000 cu. ft., composed of about 2,300,000 individual stones of an average weight of two and one-half tons each, or nearly

² Cf. Philo of Alexandria: *περὶ τῶν ἑπτὰ θαυμάτων*.

six million tons in all.³ An ingenious Frenchman has calculated that this is enough stone to encircle France with a wall 4 ft. in height and 1 ft. in thickness. At 50 cents per cubic foot for quarrying, shaping, transporting and hoisting these stones into position—a very conservative estimate—this huge pile would cost about \$42,500,000 of our money to reproduce. From its top the strongest man cannot throw a stone which will clear the base. No man ever left a grander or more lasting memorial of himself. One feels it was built for eternity.

Only recently have we begun to rightly understand the great antiquity of the monuments of lower Egypt. When Napoleon encouraged his soldiers before the "Battle of the Pyramids" with the famous words, "Forty centuries are looking down upon you from the height of these pyramids," he was certainly exaggerating according to the chronological conceptions of the history of Egypt held in his days. For though authorities still differ about the dates of the Pharaohs of the IV Dynasty—the builders of the Gizeh pyramids—they are coming more and more to push the dates far back of the years formerly assigned them. There are three principal sources for constructing a chronology of Egyptian kings. We have fragments of the lists of 30 out of the 31 dynasties of Egyptian history, made in Greek by the native priest Manetho, who lived in the III century B.C. His compilation was based upon temple archives and he gives the length of the reign of each dynasty and generally also the names of the different kings. There is also a mutilated papyrus—called the Turin papyrus from its present location—containing lists of the Pharaohs down to the XVIII Dynasty. And then there is the great mass of monumental inscriptions which are slowly being deciphered and arranged, though their importance is not primarily chronological. The dynasties of Manetho are still kept by modern scholars, though the great diversity in Egyptian dates is largely the result of doubling some of them, on the principle that they were sometimes parallel, or that father and son often reigned together. This has caused endless confusion. Thus the date of Menes, the first king of the I Dynasty, now generally set at about 5000 B.C., has ranged all the way from 6117 B.C. (the date assigned by Henne) to 2182 B.C. (the one assigned by Hoffman), with innumerable intervening datings. Lenormant has declared that not a particle of monumental evidence has ever been adduced to prove that any two of Manetho's dynasties were contemporary. Hence, many authorities now are of the belief that his lists were uniformly serial, so that the divergent datings of the earlier Pharaohs have been greatly compressed. Thus Flinders Petrie—perhaps the greatest of living Egyptologists—has assigned to Khufu, the dates 3969-3908 B.C. Mariette, on a careful comparison of Manetho's lists with the Turin papyrus, has pushed these dates back to the end of the V millenium, and Maspero, another French Egyptologist, has assigned them more exactly to the years 4075-4052 B.C. Still some German historians—as well as several older English ones, as Wilkinson—have been satisfied with

³ The original measurements—slightly differing with different authorities—may be given as follows: height, 481-487 ft.; length of side 764-768 ft.; content of core about 88,479,000 cu. ft., weighing about 6,848,000 tons!

a later dating for the Pyramid Builders than the dates accepted by Petrie, Mariette and Maspero. Thus Brugsch-Bey has given 3700 B.C. as the century of the building of Khufu's tomb, while Lepsius brought it down as late as 2800 B.C. As we gradually know more of the history of the Nile valley, the tendency is rather to give these kings a still greater antiquity than the beginning of the V millenium. A recent discovery by Borchert in a contemporary papyrus shakes the heretofore generally accepted dates of the kings of the XII Dynasty (2778-2565 B.C.) and seems to assign them to the second half of the IV millenium, which, if correct, would necessitate a redating of all the earlier dynasties. So Khufu would have built his tomb sometime about the middle of the V millenium or earlier, and Menes, who followed the prehistoric "Hor-Shesu" or "Servants of Horus" would have reigned centuries before 5000 B.C., at a date more in harmony with that long ago assigned him by such writers as Henne, Böckh and Unger. But it will be a long time, if ever, before the chronology of Egyptian history is fixed. In any case, Khufu's sepulchre was built an incredibly long time ago. One of the first great dates in European history is that of the battle of Marathon, 490 B.C. From this date to that of Khufu, it is at least one and one-half times as far as this is removed from us to-day, and Egypt then was very old. Well might the priest of Saïs say to the Greek, as Plato in his *Timaeus* records:—"O Solon, Solon, you Hellenes are but children and there is never an old man who is a Hellene. In mind you are all young. There is no old opinion handed down among you by ancient tradition, nor any science hoary with age."

As we stand today before the corrugated sides of Khufu's sepulchre, it looks very different than it once did; for almost every vestige of the smooth outer casing, which Philo, the Greek writer who has left us a description of the monument from Roman times, says was composed of stones so nicely fitted as to appear one solid stone from top to bottom, was removed by the Arabs in the Middle Ages, when they used these pyramids as quarries for building the walls and mosques of the citadel of Cairo. When one beholds the size of these structures upon the citadel today, one would conclude that the pyramids must have been utterly demolished; but when one looks up at these tombs themselves at Gizeh, one sees immediately how little real damage has been done outside of the loss of their casing blocks. The destruction of the pyramids was at times carried on by the Arabs in a systematic manner. Thus the complete demolition of the "Third Pyramid" was attempted in the year 1196 by the Calipa El-Melik-el-Aziz Othman (1193-1199). He organized a party, pitched a camp at its base and began operations. For 8 months the work went on at great expense and labor. Finally so little had been accomplished, that the undertaking was given up. The casing blocks from only one side of this, the smallest of the three pyramids of the Gizeh group, had been removed in that time.

Though vast and imposing still, the beauty of Khufu's tomb is gone forever. The broken and jagged surface up which we climb today is ugly in the extreme. But we have a description of the former smooth and polished surface from the pen of an Arab physician, Abdulatif, who was born in the year 1161, at Bagdad and who saw it still in place. He says: "The most



THE THIRD PYRAMID

admirable particular of the whole pyramid is the extreme nicety with which these stones have been prepared and adjusted. Their adjustment is so precise that not even a needle nor a hair can be inserted in any two of them. They are joined by a cement laid on as thin as the thickness of a sheet of paper. The stones are covered with writing in that secret character whose import is at this day wholly unknown. These inscriptions are so multitudinous, that if only those which are seen on the surface of these two pyramids [of Khufu and Khafra] were copied on paper, more than ten thousand books would be filled with them." This fine jointing is proven by the discovery by Col. Howard Vyse of two of the casing blocks still *in situ*, buried deep beneath the débris which covers the base of the "Great Pyramid." Though these stones are as close as $\frac{1}{500}$ of an inch and the mean opening of the joint is but $\frac{1}{30}$ of an inch, still it is filled with a fine liquid cement, despite the enormous superficial area of the face of each stone, amounting to about 35 sq. ft. The weight of these two stones—about 16 tons each—is so great, that the possibility of planing the vertical surfaces by rubbing seems out of the question, so that we are at a loss to see how so fine a jointing was made. Such accuracy as this—the mean variation from a straight line being only .01 of an inch on a surface 75 inches long—is only attained in our day by opticians in fitting lenses. Here it was done not on a scale of inches nor even of feet, but of acres!

Of the inscriptions mentioned by Abdulatif, we have many corroborators in earlier Arab writers. One of them, Ebn Haukal, speaks of Syrian and Greek writings on various parts of the pyramids. Another, a geographer who gloried in the long name of Seif-ed-doulah-ben-Hamdan, confirms the

existence of Greek inscriptions. Herodotus, when he visited the "Great Pyramid," spoke of an inscription in "Egyptian characters"—whether he meant hieroglyphics or alphabetical characters we cannot say—and without a semblance of humor accepted the interpretation of his guides, that it stated how much had been expended for the workmen in "radishes, onions and garlic"—the sum of 1600 talents of silver, or about 1,750,000 dollars in our money! We are reminded of the complaint of the Israelites in Numbers (xi, 5): "We remember the fish which we did eat in Egypt freely; the cucumbers and the melons and the leeks and the onions and the garlic." Just what all these inscriptions were, we do not know. None has survived even on the preserved upper casing of Khafra's pyramid nor on any of the others. Those of any importance may well have been purposely destroyed. Doubtless many of those mentioned by the Arab writers and mediaeval travellers were merely travellers' "graffiti," which were to be expected upon a monument as much visited as the "Great Pyramid." For people in the past were doubtless as much delighted to scratch their names and sentiments on public monuments as nowadays. One such Latin inscription from one of the Gizeh pyramids has been preserved to us by the pilgrim William of Boldensele (the Knight of Nygenhusen), who saw it in 1336. It ran as follows:

"Vidi pyramidas sine te, dulcissime frater
Et tibi, quod potui, lacrymas hic maesta profudi.
Et nostri memorem luctus hic sculpo querelam."⁴

Just what Herodotus saw we do not know, but it is safe to conjecture that his guides here as frequently elsewhere were "stringing" the inquisitive Greek. It is not probable that they could understand the sacred characters.

These incrustation blocks were all six-sided stones and not triangular at the ends merely to fill in the steps of the core like a veneer. That their exposed faces were dressed down after they were in place on the pyramid, is evidenced by the excess of some inches still to be seen on the casing of the "Third Pyramid" of the Gizeh group, where the first 16 unfinished courses are still in place. Herodotus was told by his guides (ii, 125) that the casing blocks were set in place by means of machines composed of short pieces of wood, either a different machine being used for each course, or the same portable machine for each course in succession, and that the higher parts were finished first and the lowest last. But we know that the opposite was the case. For the horizontal top surfaces of the preserved blocks were marked with masons' lines in order to show where each was to be placed after a portion of a course had been set up on the ground. It was only possible to make such hair-like horizontal joints as those described by thus working upward. So some staging of stone may have been built over the parts already finished, to help in the hoisting of other stones further up.

Before visiting the interior of the "Great Pyramid," we make the ascent of the outside for the view. The ascent, though it is not difficult or hazardous, is laborious and slow, owing to the heat and to the height of many of

⁴ "I have seen the pyramids without you, dearest brother, and here in my sorrow I have poured forth my tears to you as I could, and here I am inscribing my complaint as a memory of our grief."

the steps. You are well taken care of—far too well—by the bevy of turbaned Bedouins detailed by the authorities to assist you; for latterly the pyramids at Gizeh have been taken from the control of the Sheiks of the desert by the Egyptian government, and visitors, by paying a fixed sum (about two and one-half francs each), are guaranteed security and guides. All that is required of you is to resign your independence to these guides; two of them taking you by the arms, spring upward step by step with the greatest agility, pulling you after them, while perhaps an unenlisted volunteer behind bombards you with determined boosts with his head, and still another carries the welcome “goolah” of cold water. In this uncer-



THE ASCENT OF THE GREAT PYRAMID

monious way you are hauled up the 201 steps which vary from 2 to 5 ft. in height. The ascent is generally made along the northeast corner, as in the picture, as the stone here is harder because of the greater exposure to the weathering, and so is not worn away as in the middle of the slant faces. At last you arrive at the top—a more or less level space about 30 ft. square, upon which are still to be seen the remnants of two more courses of masonry. Diodorus, the historian of the I century B.C., describes the top in his day as having an area of 6 cubits or 9 ft. square. When the top was removed we have no record; it is possible that it never was brought to a point, as has been so generally imagined, but was levelled off into a “pyramidion” as in the case of obelisks, though there is no proof of this.

The view from the top is superb. Nowhere else in the world are life and death, fertility and desolation, seen in such close proximity and marked contrast. To the west even to the horizon are the glaring yellow-brown sands of the Sahara with only here and there a barren rock to relieve the monotony—truly an awful sight from its dreary immensity. With its rolling waves of sand it looks like a petrified ocean, endless, monotonous and desolate; when it is lashed to fury by sandstorms which sweep over it with resistless force, it must be truly an awe-inspiring sight. One is reminded of the fate of the army of the Persian King Cambyses—50,000 strong—which was sent out to capture the oasis of Ammon, and was overwhelmed to a man by one of these fatal simoons. To the south, out over the tops of the neighboring pyramids of Khafra and Menkaura, stretches the narrow valley of the Nile hemmed in on either side by the Lybian and Mokattam hills, with the noble river winding between in unobstructed view for many miles; a narrow belt of verdure along its banks is bordered by the sandy waste, the emerald green of the cultivated soil finely contrasting with the red tint of the desert and hills. You now realize the meaning of the words of Herodotus, who said that Egypt was the gift of the Nile, for in places the desert almost touches the river banks. To the north and east is the beautiful delta interspersed with countless channels winding like silver threads through the rich arable land with its blue-grass vegetation; stately palm trees on their banks wave their flexible fan-like leaves and interlace their shadows over the many villages of the fellaheen, which are perched on mounds as a protection from inundations. Straight away to the eastward lies Cairo with its lofty citadel crowned by the white walls and minarets of the mosque of Mohammed Ali, and with the delicately tinted faraway Mokattam hills for a back ground. And as you look down upon the Moslem city from which all these silver threaded canals radiate, you are reminded of the fanciful oriental comparison of the delta to “a fan fastened with a diamond stud.” It is indeed a wondrous picture and as you let your eye wander over the mass of ruins on the tiny plateau below you, with its broken pyramids, temple ruins and the scarred, though still majestic Sphinx, you cannot refrain from reflecting how different it all is today from what it was 6000 years ago. What is now a melancholy waste was once thronged with priests and nobles and soldiers and all the pomp and splendor of those far off times. Just below, a little to the south, stood the palace of Memphis glittering in the sun, whose very location was a matter of dispute until two years ago, when its ruins, 12 to 15 ft. below the present level of the ground, were excavated by the British School of Archæology. One cannot help meditating upon all the tremendous changes the world has undergone since then, upon the generations of men who have lived and died, upon the mighty empires which have risen and flourished and gone into decay. A sense of the utter futility of human effort comes over you and you feel the meaning of the words of Isaiah (xl, 6-7). “All flesh is grass and all the goodliness thereof is as the flower of the field; the grass withereth and the flower fadeth . . .” It is a dismal fact that all that is now left of this vanished people has to do only with death. The palaces and the capitals of her kings are gone—even their sites today are often matters of conjecture—but her stupendous temples



PRESENT SITE OF MEMPHIS NEAR BEDRASHEEN

and her rock-hewn tombs and this long line of giant sepulchres, the pyramids, still remain as a mockery of her former glory.

However, all such poetic fancies are soon put to flight by the ceaseless clamors of your guides for "backsheesh"—for if there is one Arabic word you will learn and hate it is this. And you are pestered with offers of spurious antiquities, cameos, scarabs and everything imaginable, which are mostly manufactured in England. You are intrigued into having your name carved on one of the top stones; first the price demanded will be four shillings, which, if you are firm, may be reduced perhaps to one. I even offered a sixpence to my guide Mohammed, who finally, after a good deal of murmuring set about the task. "But I rub it out later" I heard him say to himself, but in a voice intended for me to hear. In righteous indignation I took him by the collar and made him raise his right hand and swear by the beard of his great namesake that he would do nothing of the kind. Then I felt morally certain that my name would not be erased, for that oath to a Mohammedan is inviolable. Another contribution is levied to encourage one of the Arab guides to run down the pyramid at break-neck speed, across the intervening space of 500 ft., and up to the top of the neighboring Pyramid of Khafra, and then back again to where we are standing, all in 9 minutes. A guide was collecting a shilling a head from the members of the two or three parties resting at the time at the top; I demurred and told him four shillings were enough for all. So he took me aside and said, "Doctor, you pay nothing and you say nothing," and when he got around to me he passed me with a sly wink. The feat performed by the Arab looks decidedly

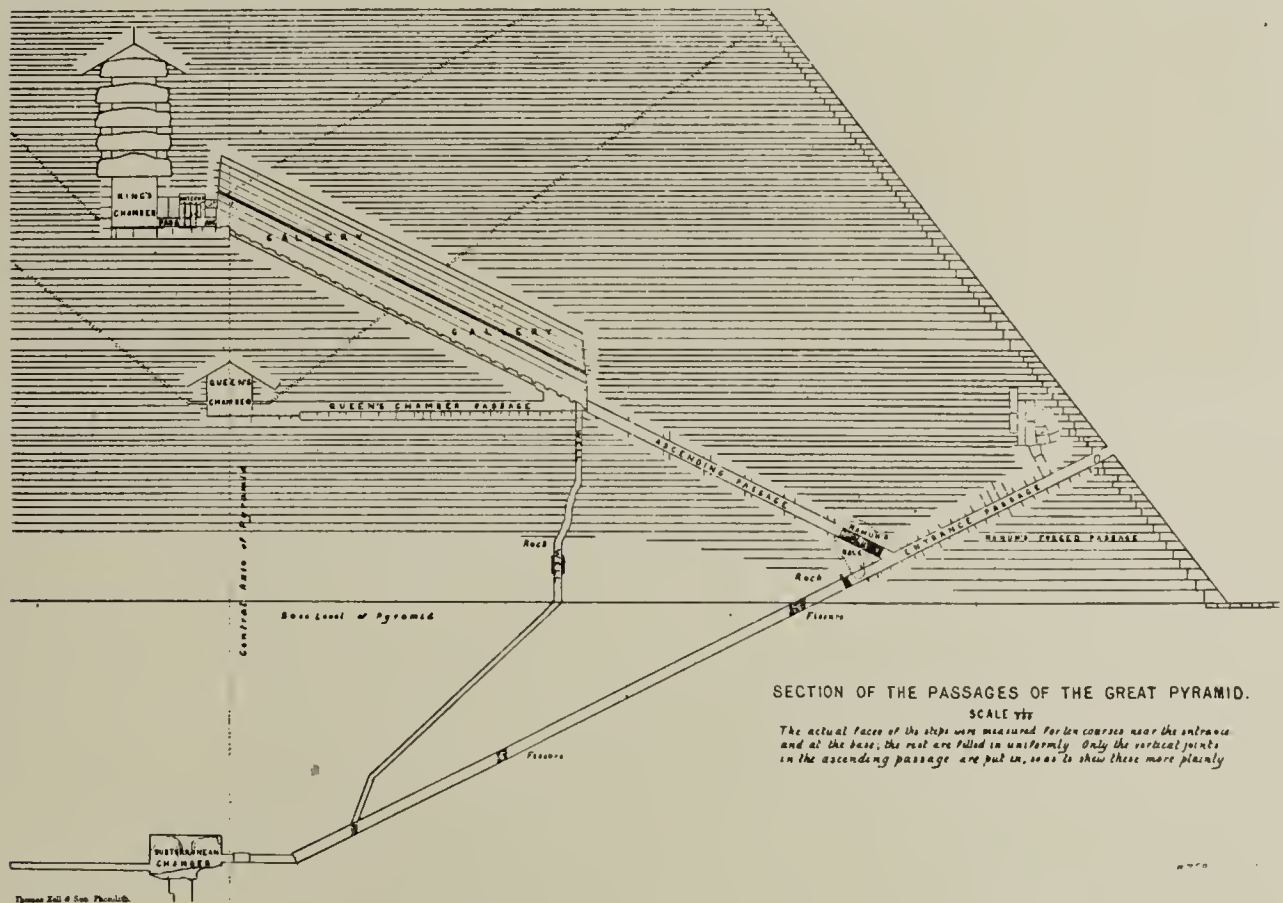


THE PYRAMID OF KHAFRA AT GIZEH

dangerous. Mark Twain tells how he sent his guide over on the perilous journey twice, hoping that the rascal might break his neck for disturbing him by his continuous begging for "backsheesh." Climbing this "Second Pyramid"—which is still 450 ft. high—is not to be recommended to people with weak nerves, for the casing blocks are still in position for nearly 100 ft. down from the top; and when you have ascended thus far, the core masonry below you becomes invisible, and you seem to be climbing a pyramid in the air quite as a fly would climb a gigantic toadstool. One misstep would surely be fatal; so you draw a breath of relief when the daring Arab is safely back again.

As I was taking in the view with my field glass, Mohammed asked to use it. On looking through it he saw his native village in the plain below, where he could make out his two wives idling before the door of his house. As he remarked on what he had seen, I asked him, "How is it, Mohammed, that you can manage two wives? We Americans can only manage one and that sometimes with difficulty." "Oh,"—he answered—"dey bery good wife, just like two sisters. I give much stick." I doubt not they got "much stick" when their worthy lord got home. As you see, all this seems quite out of keeping with the thoughts one ought to have while on a visit to the pyramids, but the horde of clamorous Bedouins makes it impossible to really enjoy it. By previously bribing your chief guide, you may be left alone to cogitate as you will. Finally, after remaining for perhaps an hour at the top, though our guides would scarcely allow a moment's rest, we began the descent, which we soon found a far different matter from the ascent, for now we are looking down a very steep and

dizzy height. Here the Arabs are of real service to those whose nerves are not steady. Wishing to descend unassisted, I had much ado to break away from my guides. The contest finally ended in a race for the bottom at breakneck speed, jumping from stone to stone, a proceeding not at all agreeable to the Arabs, who wanted to magnify the danger of what really was a very simple undertaking. At last we are down and at the entrance to the interior passages and chambers, which we are to visit next—at least those of us who care to undergo the fatigue and labor of crawling and clambering along the steep and slippery passages, where the air is stifling. The temperature remains uniformly 79° Fahrenheit, the mean temperature of the surrounding outer air, but is inconceivably close.



PASSAGES IN THE GREAT PYRAMID
From Petrie, *Pyramids and Temples of Gizeh*

To conceal the whereabouts of the funeral chamber in the heart of the pyramid, was the great care of the builders. First of all the entrance to the interior was carefully hidden beneath the masking casing. Strabo, the Greek geographer who visited the "Great Pyramid" in the first pre-Christian century, has left a short description of its entrance. He says it was closed by a moveable stone door which worked on a hinge or pivot. In his day the entrance seems to have been known only to the custodian priests of the sepulchre, by whom it was shown on occasion to visitors. For the worship of the deified Khufu had already lasted for nearly 4000 years down to Roman days. The remains of just such a revolving stone door have been found still in place in the entrance of the "South Pyramid" at Dahshur. The

knowledge of the secret entrance, which Strabo saw, must have been lost within the next few centuries, for the Arabs who rifled the pyramid in the IX century of our era knew nothing of it, but gained access to the interior by a passage which they hewed through the stone. Now that the casing stones have been removed, the old entrance is plainly visible near the middle of the north face, some 24 ft. to one side of the center at the line of the 18th course of masonry, about 45 ft. above the base. The adjacent stones have since been torn away so that the mouth of the opening passage is now about 8 ft. below the slant face. Here begins a long descending passage, its dimensions being 3 ft. 4 in. high by 3 ft. 11 in. wide—composed of



PRESENT ENTRANCE TO THE GREAT PYRAMID

perfectly fitted limestone blocks whose jointing is almost imperceptible. It descends at an angle of $26^{\circ} 41'$ for a distance of 293 ft., until it debouches into an unfinished rock-hewn chamber 46 ft. long, 27 ft. wide and $10\frac{1}{2}$ ft. high. The floor of this crypt is $101\frac{1}{2}$ ft. below the base of the pyramid, but is still above the highest level of the Nile inundation, and so there never could have been any channel leading to it from the river as Herodotus says. From the further end of this chamber the passage runs about 60 ft. more and ends in a *cul de sac*. Doubtless this long passage and chamber were the only parts of the interior known even to the priests in Graeco-Roman days. Strabo describes nothing else. However some 63 ft. down the

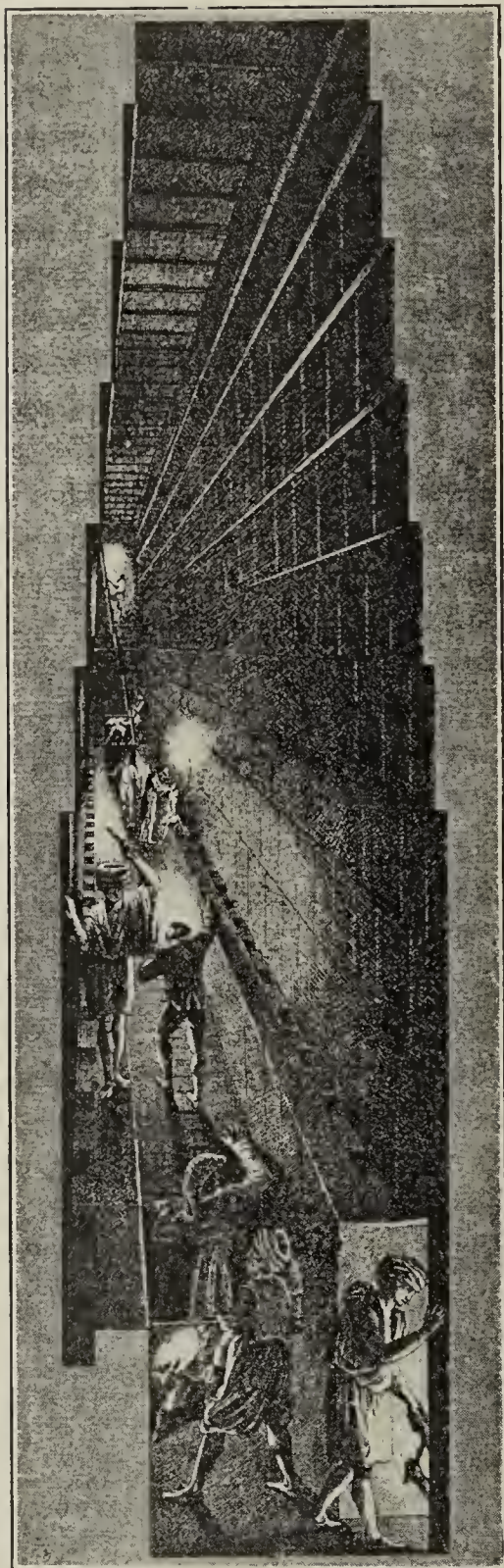
slippery incline from the entrance, was the beginning of an ascending passage carefully concealed in the ceiling, which led to the upper chambers. Its discovery by the Arabs will be described later.

This second passage, of the same dimensions as the preceding one, and rising at nearly the same angle from it, *i.e.*, $26^{\circ} 18'$, ascends for 109 ft. and then forks. From this point a horizontal passage (3 ft. 10 in. by 3 ft. $5\frac{1}{2}$ in.) ends 110 ft. further on in a room called by the Arabs the "Queen's Chamber" because of its gabled roof—the tombs of women in Arabic cemeteries being gabled. This room is of imposing dimensions, being 18 ft. 10 in. long, 17 ft. wide and 20 ft. high. In its eastern wall is a huge niche 15 ft. high and 3 ft. deep which is supposed to have been the receptacle of a Ka-statue, perhaps of Knumu-Khufu, the supposed co-regent of Khufu.⁵ The back of the niche was broken out by the Arabs in search of treasure, and an excavation 50 ft. long was made through the masonry to the eastward. The limestone walls of the "Queen's" chamber, now incrustated with salt, show the most remarkable jointing in the whole structure, even surpassing that of the outer casing already described; for except on the closest scrutiny, these joints are wholly invisible, and yet cement is known to have been used even here. Though the chamber is now empty, Edrisi, an Arab writer of the XIII century, saw a sarcophagus here, which may have contained the mummy of Knumu-Khufu. Two air-shafts, doubtless built to aërate the chamber during its construction, take the shortest course to the outer faces of the pyramid, though their apertures there have not been located.

Let us now return to where the horizontal passage branches off from the ascending one. We find the latter is continued at its original angle toward the center of the pyramid, now enlarged into what is known as the "Grand Gallery." Without the help of parallel cuttings in the floor and on the side walls—doubtless made to facilitate the introduction of Khufu's sarcophagus, we would not be able to walk up its polished and slippery surface. This magnificent structure is 156 ft. long, 28 ft. high and 6 ft. 10 in. wide at the bottom, the increased width forming two raised ramps along either side; its side walls rise in slightly projecting parallel courses finally narrowing to 31 in. at the ceiling, which is composed of a single line of stones set in between the side walls like the keystones of an arch. Though the jointing of these walls is not so perfect as that of the "Queen's Chamber," it has enjoyed even a greater reputation, merely because it is coarse enough to be visible; still it is so fine that nothing can be inserted in the interstices. Here no cement is discoverable.

At the top of this gallery is a small horizontal passage which leads into a room now known through its Arabic appellation as the "King's Chamber;" in the middle of its course it widens out into an anti-chamber which is 11 ft. long by 5 ft. wide and 12 ft. high, whose end walls are channeled at equal intervals on each side by longitudinal grooves, the purpose of which is unknown. One of these compartments supports a granite slab which hangs 43 in. above the floor and an equal distance from the ceiling; it is supposed that similar slabs were intended for the other three, perhaps to be let down

⁵ But the word "Knumu" may only mean "Builder" and so be a title of Khufu himself.



“GRAND GALLERY” IN THE
PYRAMID

From Maspero, *Dawn of Civilization*

as portcullises, to close the entrance into the chamber beyond. The slab still in place, however, never was let down, as the grooves never were continued to the floor. Still other evidences of unfinished work are to be seen in the whole passage, so out of harmony with the perfect work generally visible elsewhere.

We are at last in the “King’s Chamber,” which contained the royal sarcophagus of granite which is now empty and coverless. This is a room nearly double the size of the other, its exact dimensions being 34 ft. 3 in. long, 17 ft. 1 in. wide and 19 ft. 1 in. high. It was ventilated like the “Queen’s Chamber,” by two air-shafts, 6 by 8 in., extending to the outer faces of the pyramid, which were reopened by Vyse in 1838. They are 234 and 174 ft. long respectively, the difference in length being due to the position of the chamber, which is several feet to one side of the medial line of the pyramid. The side walls are entirely lined with red granite blocks in 5 parallel courses each 4 ft. high—and doubtless as thick—the heights being all carefully gauged, the average variation being only one-twentieth of an inch. Though this masonry was so carefully fitted, the same care was not used in the leveling of the room—unless this be due to earthquakes—for the whole chamber is tilted over to one corner, so that the granite wall courses are now $2\frac{1}{4}$ in. higher at the northeastern than at the southwestern corner—a greater variation than is shown in the whole base of the pyramid. This error is the more remarkable, since we find such accuracy insisted on in the side walls. It may be explained by supposing that these granite courses were prepared long before the chamber itself was constructed and when later supervision—because of haste or perhaps the death of the original abler

architect—became less accurate. There are many signs of hurry visible in other parts of the interior of the pyramid. Certain stones liable to damage during construction were left rough, to be finished later; the floor of the “Queen’s Chamber” was left rough, doubtless for the reception of another course of stones which was never laid; the vertical edges of its doorway were left with an excess of an inch, a short bit only at top and bottom being drafted to the true surface as a guide to the masons; the roof and sidewalls

of the ascending passage were never smoothed, and the parallel ramps at the upper end of the "Grand Gallery" are badly out of level, in some places 1 in. on a width of 20 in.; the coffer in the "King's Chamber" is also imperfectly finished. With the exception of the uncompleted underground chamber, which manifestly shows an early change in the architect's plan, it may be said in general that these signs of haste are to be found mostly in the upper parts of the structure, *i.e.*, the parts built last.

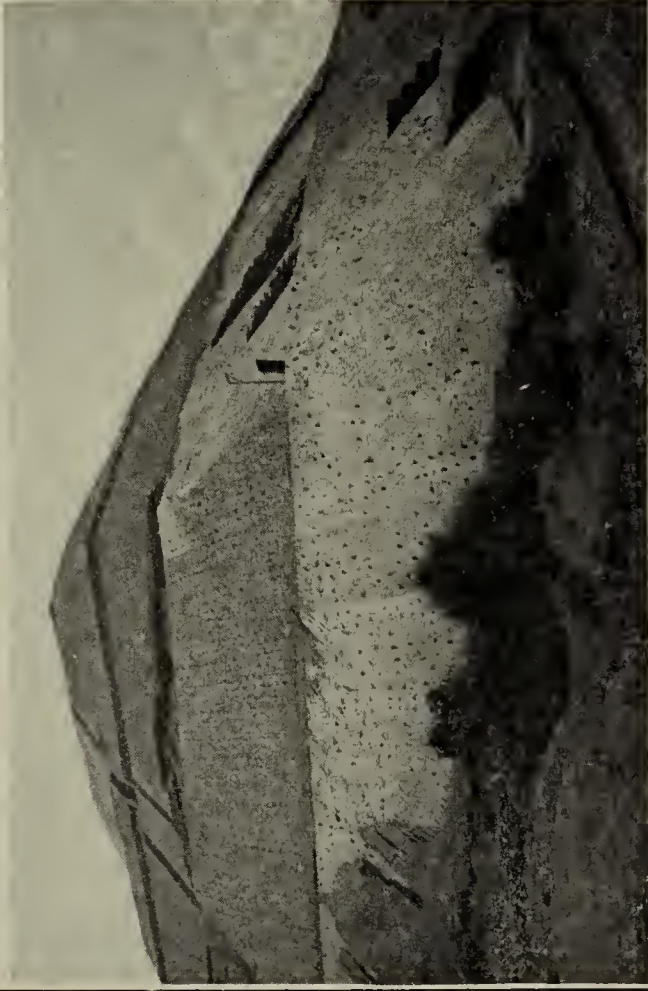
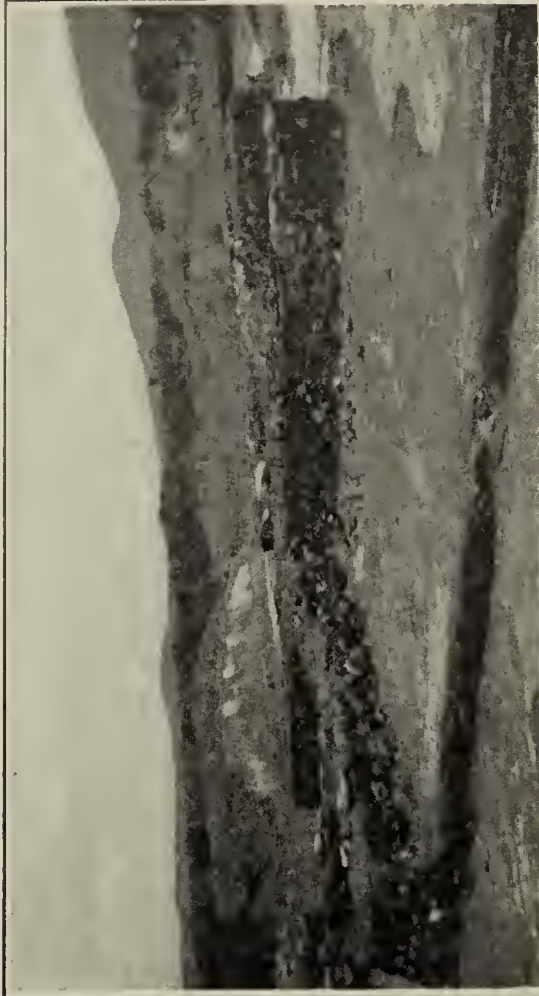
(To be concluded in the next issue.)

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EARTHWORKS IN THE BELTOUT VALLEY, ENGLAND.—
In August, 1909, the Brighton and Hove Archæological Club carried on excavations in the Beltout Valley. Early in the year Mr. H. S. Toms received information of the existence of peculiar earthworks in the prehistoric promontory fort enclosing the headland known as Beltout, near Beachy Head lighthouse. In July Mr. Toms obtained permission to excavate and made a preliminary trip to the spot. Much of the valley-side entrenchment had disappeared through coast erosion. The western extremity, however, had formed a turning angle and hence the lower or northern side of the earthwork was intact. This side measured 210 ft. in length and the remains of the eastern side 120 ft. Assuming that this was square like others of its kind, the area must have been in the neighborhood of 4900 sq. yds. A second valley entrenchment of a new type had been constructed across an enclosed part of the one occupying the valley-side. Its ditch was within the enclosing rampart. The entrenchment appeared to be of later date. Three sections were dug through the two earthworks. In the first two excavating trenches the finds consisted of a few flint shore-pebbles, known as "sling-stones" and artificial chips of flint. In the third excavation was found a heap of 38 flint scrapers, burnt flints or cooking stones, numerous fragments of Bronze Age pottery, a fragment of a Bronze Age drinking-cup or beaker, pottery, and other objects. Mr. Toms considers the objects as belonging to times later than the Neolithic, arguing from the fact that pottery of similar nature had been found in burials of the round barrows belonging to the transitional period of the Bronze Age. As the entrenchments at Beltout are similar in plan to Bronze Age works in Dorset, it seems probable that they were constructed by tribes of like culture, *i. e.* Bronze Age Britons. Some consider that these earthworks were not for military purposes, but for the protection of cattle from the wind.



THE ROAD OF THE DEAD

RUINS OF DWELLINGS AT TEOTIHUACAN

PYRAMID OF THE SUN SHOWING TERRACES, PROTECTING WALLS AND REMAINS OF STAIRWAY

HOUSE IN THE RUINS SHOWING STUCCOED WALLS ON THE RIGHT

THE PYRAMIDS OF SAN JUAN TEOTIHUACAN

WITHIN the valley of Anahuac, there is a name which has survived the vicissitudes of time. It is that of Teotihuacan, the evocation of which brings back to memory glimpses of that well-nigh unfathomable past shrouding in mystery what is, nevertheless, the comparatively recent protohistoric life of humanity upon the American continent. The derivation of the name itself has not been ascertained. Sahagun states, in his work entitled *Historia de las Cosas de Nueva España*, that it originated in Teotl which means God. He claims, however, that, at an early period in its history, the town was named Veitio-can, or "the city of signals."

An hour's ride from Mexico City, on the Mexican Railway, brings the traveler to the paltry hamlet of San Juan Teotihuacan, whence a short 10 minutes' walk takes him to the foot of the Pyramid of the Sun, in the very heart of the ancient City of the Gods and in the midst of the ruins of probably one of the most ancient manifestations of civilization in the Western hemisphere.

The scenery of the environing arid region is not calculated to arouse enthusiasm, any more than the rays of a fierce mid-day tropical sun shining overhead, and the mind very logically infers at once that both of these physical features must have played their part, in due order, throughout the evolution that shaped the present type of Mexican Indian. One instinctively turns around in the vain hope of seeing a patch of green in the midst of the cheerless, heat-reverberating, whitish grey of the sands and rocks that cover the painfully-trodden and uneven surface of the desert. The only consolation afforded lies in the contemplation of the majestic mountain forms which enclose the historic locality. Northeast of the Teotihuacan plain, itself one of the most elevated terraces in the old valley, rises the lofty range of Matlalineye (Azure skirt: the name of the goddess of water), better known by its modern names of La Malinche or Tlaxcala. Within its folds, small but fertile valleys extend from north to south, thus relieving the monotony of the ambient barrenness. Farther eastward, to almost due south, the imposing contour of Popocatepetl with its snow-white top is seen to emerge calmly, out of a choppy ocean of solidified many-hued lavas that skirt its base tumultuously in a final attempt, as it were, to remind the onlooker of the convulsions that attended their eruption.

The pyramids themselves occupy very nearly the center of this plain and make up what may be described as a system of two large pyramids surrounded by a cluster of smaller ones to which the name of mounds can be more appropriately applied.

Looking out of the window of the railway car, as one approaches the San Juan Teotihuacan station, these interesting monuments may be first seen to the left of the track, a few minutes before alighting on the platform, despite the fact that from a distance it is very hard to distinguish them from the low rounded hills that dot the plain. This is especially true of the smaller

of the two principal pyramids, that of the Moon, owing to the fact that no efforts have yet been made to remove the growth of vegetation on its faces whereas the larger one, that of the Sun, has now been fully uncovered thanks to the efforts of the Mexican government which is conducting work along lines similar to that undertaken by the Italian government at the site of the buried towns of Herculaneum and Pompeii. In fact, it is quite possible to walk right up to the pyramid of the Moon and even to make its ascent, without suspecting for a moment that there lies an artificial mound, so thickly has time clothed its surface with brush.

Both of these large pyramids can be properly referred to the "teocalli" type of ancient monuments, prominently in evidence throughout Central and South America. Such structures are distinguished by their form, which is that of a truncated pyramid, terminating in bases that are usually square, although they happen to be rectangular in the instances under consideration, more probably owing to the effects of time rather than to any preconceived design. The upper base forms a convenient platform whereon ceremonial rites and prayer offerings could be conducted, and in many cases, furthermore, it provided formerly a suitable site for the erection of a building specially destined for such holy usages.

If credence can be given to narratives of early travelers, it would appear that a temple did formerly crown the top of the Pyramid of the Sun. Chevalier de Boturini, who visited the spot in the beginning of the XVIII century, claims to have seen its ruins, and in this, his account substantiates that of Ixtlilxochitl, another eye-witness, who had preceded him by fully 100 years. Veytia, however, in 1757, fails to discover any vestiges of a building on the summit of this pyramid and Prescott attributes this disappearance of all traces of the Indian worship to the fanatical zeal of the indefatigable Bishop of Zomarraga "whose hands fell more heavily than that of time itself upon the Aztec monuments."

The pyramid itself is 66 meters (216 ft.) high. Its base forms a rectangle 232 meters in length by 219 meters wide (760 x 720 ft.) and its upper platform has an area of 18 by 32 meters (59 x 105 ft.). Access to the latter from the bottom is obtained by means of a flight of stairs, the steps of which, in some instances, are fully half a meter high. This huge mound consists essentially of 4 superimposed truncated pyramids, the series decreasing in dimensions towards the top. Thus they produce a set of terraces that fringe the base of each of the successively smaller-sized component units.

When the exploratory excavation work was undertaken by the Mexican government a few years ago, this pyramid was overlain by a thick layer of sand and pebbles that altogether hid its form from view. This combined with the growth of vegetation all over its sides made it look just like the hill-resembling "hunch" shown in the actual picture of the Pyramid of the Moon. With the removal of the overburden, it was found that the sides had to be reinforced lest the whole fabric tumble to pieces, and a protecting wall of stones, held together by lime and cement mortar, was accordingly erected around the base and wherever needed. The result is shown in the illustration entitled the "Pyramid of the Sun."



THE PYRAMID OF THE MOON

Photo by E. Percy Smith

The Pyramid of the Moon is 46 meters (151 ft.) high and its lower base measures 130 x 156 meters (426 x 512 ft.). Almost halfway from the top, a man-size tunnel about 5 meters in length has been burrowed, and is extremely interesting in this, that it reveals the method of construction in vogue among these ancient builders. A vertical section of the walls and breast-work of the tunnel discloses a series of alternate layers of boulders and sand. The boulders have an approximate diameter of 0.10 meter (4 in.) and form layers about half a meter in thickness. The intervening beds of coarse sand have about the same thickness. No binder of any kind seems to have been used in the construction except on the outside, where the surface of the pyramids is covered by a layer of "tezontli," a porous tufa that abounds in the locality. Over this a coating of stucco has been added and patches of it are still in evidence here and there, although, as may naturally be expected, the bulk of it has been removed in the course of ages.

The fragility of such a structure ought to be in itself a strong evidence of its relative youth. It is inconceivable to think of layers of loose sand and rock, artificially heaped one upon the other, as being able to resist for an extended period of time the combined erosive action of the elements. Of course a certain amount of protection can be ascribed to the overgrowing

vegetation, but that would not wholly counteract the well-known rapid disintegrating effects of arid region climates, familiar to geologists. Recent researches fail to confirm the prevailing belief that the pyramids are hollow, a belief due to the generally accepted, though probably erroneous supposition, that they were used as burial places. It seems, however, that they were not tombs, but that they constituted merely huge bases of two temples dedicated respectively to the Sun and the Moon, and that it was their vicinity which was piously considered as a suitable final resting place, owing to the very presence of the sacred edifices.



FRAGMENT OF SCULPTURE FROM SAN JUAN TEOTIHUACAN

Photo by E. Percy Smith

Starting from the base of both pyramids, hundreds of much smaller artificial mounds radiate in every direction, and as the observer's vision gradually familiarises itself with the surrounding topography, it becomes easy to distinguish them from the last low outlying hills of the encircling ranges. The magnitude of the area covered by the artificial heights conveys an adequate idea of the erstwhile importance that must be attributed to Teotihuacan, and bespeaks especially the strength of religious sentiments connected with the locality. These sepulchres appear to be symmetrically laid out according to a general plan, details of which have yet to be ascer-

tained, although some observers believe that the ground plan of the city has been modeled on that of an immense cross, the two pyramids occupying the center from which the four arms extend outwardly. They are best in evidence on either side of the spacious causeway called the "street of the Dead" connecting the two pyramids. This appellation has its origin in the name of the plain, called "Micaotli" by the Mexicans, and which signifies the "Road of the Dead."

As has just been stated, it is highly probable that the devout dwellers of the valley, far and near, considered burial in such a locality as a consummation to be ardently desired and accordingly directed that their bodily remains should be removed to within the shadow of the pyramids. Similar manifestations of religious feeling can be witnessed today at Meshed in Persia, not to speak of the prevailing desire, among followers of any creed, to be buried in the proximity of some holy spot, a tendency shared in common by all members of the human family since time immemorial. There is, therefore, good reason to believe that subsequent to the attainment of religious fame by Teotihuacan, it became a kind of vast cemetery, and that the smaller mounds around the pyramids represent so many mausoleums.

In addition to the mounds, the ruins of numerous dwellings have been unearthed. Remnants of walls are everywhere in evidence and it was the writer's impression that further research would reveal the existence of a still larger number of these ruined houses, since the meager historical testimony available conveys the impression that Teotihuacan was once a populous and opulent city. The walls are built of the common sun-dried mud "adobe," the use of which prevails to this day throughout all Mexico. They are plastered over with a thin layer of lime mortar which has withstood the wear of centuries in many instances, besides retaining its original color. Occasional paintings of an exceedingly crude execution are detected on these walls. A dull red generally appears to be the color used, possibly because of the ease with which the pigment was obtainable. The drawings consist mostly of white circles painted on the reddish background. The human body is painted in the most primitive fashion imaginable, the head and body consisting of irregular circles with appended straight lines to represent the limbs. They are very inferior to any similar manifestations of art found in the earlier Egyptian ruins. All told it was patent that the visitor found himself here in presence of an extremely undeveloped stage of civilization ranking far below that flourishing along the banks of the Nile and of the Euphrates as far back as 4000 B. C., notwithstanding the probably shorter span linking it to our own day. The same can be asserted of the sculpture, which cannot advantageously stand comparison with the exquisitely true to Nature pre-dynastic types from the Nile valley. It is even inferior to the work of Hittite sculptors sporadically scattered through Asia Minor. The carvings at Teotihuacan, apart from geometrical designs, consist chiefly of hideous animal features, unnaturally distorted to suit the unbalanced fancy of the savage artist. The total absence of any kind of delicate chiseling that might appropriately find a place in a wild beast's mane or muscles impresses one with the conviction that the aboriginal intelligence had not reached a stage sufficiently advanced to require faithful interpretation.

An interesting but small collection of objects found in the course of the excavation work is on view in a one-room building temporarily erected pending completion of the construction of a museum which will face the Pyramid of the Sun. Most instructive of all were the obsidian knives, indicating that metals were unknown, and of these the fragments found on the Pyramid of the Moon had a sufficiently keen edge to enable the gatherers to sharpen their pencils with great facility. The bulk of the collection consisted of pottery for household use, along with stone carvings of human features. There was no evidence of metals having been known to the earlier inhabitants, probably to the ones who were contemporaneous with the builders, whose civilization should accordingly be logically classed as a most highly developed stage of the stone period. It is, however, quite probable that at some time before the advent of the Conquistadores, mining of metals must have been known to the descendants of the "giants," as the builders of the pyramids were called in the traditions of the natives.

Who these "giants" were is a question that historians cannot answer. Were they Toltecs or did they belong to an antedating race? All that is known from oral traditions handed down to this very day, as well as from the very few records available—and here we refer to the important Quiche manuscript of Chichicastenango—is that the appellation has been applied by the natives to the earliest settlers of the region. These ancestors of the modern Mexicans are the ones whose names have been forgotten, but to whom Central American mythology attributes the performance of valorous deeds. From behind the veil that hides our perception of the past, native folklore has drawn out, nevertheless, some frail connecting threads, amplified by that ever present glamour of antiquity which recurs even now to our own fancies, as it did then with greater force to less cultivated imaginations. They were the builders of the pyramids at a time when the opulence and splendour of Teotihuacan far outshone that of its neighboring rival towns. Briefly speaking, archæologists have so far been unable to determine exactly to what race should credit be given for the construction of these monuments. Some have thought that the Toltecs were the "giants." Others again hold that no such race ever existed and that the name was given to a band of migratory Indians who appeared on the Mexican table land some time in the VII century A. D. and settled there; also, that the pyramids were already built at that time.

This brings to mind how impossible it is to take a step in the unravelling of the confused knowledge of early American history without having to deplore the irretrievable loss due to the misguided vandalism first displayed by the monks who accompanied Cortez and whose example was followed most unfortunately by their later-day colleagues, practically throughout the entire period of the Spanish dominion. Blinded by a zeal, the offspring of Europe's most dismal days of intolerance, and one that knew no restraint when its fury was let loose; totally oblivious to the effects of their wanton destruction of the already scant information that was to be found among the natives in the shape of documents handed down from generation to generation, they ruthlessly set about to obliterate all vestiges of an existing civilization, which, however much of an inferior order, yet deserved better

attention since it constituted one of the instructive links in that chain of progress forged by humanity in its onward course of development. But despite this obscuring blur, there is much reason to believe that the pyramids were built before the Toltec appearance. At any rate it is quite certain that Teotihuacan was the flourishing center of the then existing civilization and that the religious character of its importance, probably led it to assume a rank similar to that about to be occupied by Rome and Mecca on the Eurasian continent.

It is easy to conceive of the deep hold acquired upon the primitive mind of the Indians by the religious ceremonies performed at the august shrines. From all around the valley, hosts of pilgrims undoubtedly came periodically to attend the sacrifices made to the gods to whom they brought their offerings. Momentous questions of private or tribal interest were probably



WALLS ON WHICH PAINTINGS WERE FOUND, AT SAN JUAN TEOTIHUACAN

Photo by E. Percy Smith

discussed and resolved beneath the peaceful shadow of these pyramids. Within the holy city numerous feast-days must necessarily have been set apart for popular rejoicings. Among these holidays that of the apotheosis of Nanahuatl, wherein his metamorphosis into the Sun is celebrated, is the most interesting, since through the shadowy folds of the allegory handed down to us there lurks the faint glimmer of a ray of historical light of no little significance. The story runs as follows:

When the giants still lived in Teotihuacan, it so happened that the sun did not rise for many days, whereof much sorrow was occasioned, for the dullest among them could easily perceive that the prolongation of such an event would result in the direst calamities for the race. To avert the

impending dangers, a meeting was called, in the course of which the means of provoking again the apparition of the sun were discussed. It was finally decided that nothing less than the sacrifice of one of their lives could appease the anger of the gods. A pile of wood was soon prepared and set ablaze; around it stood the giants waiting to see who of their number would be courageous enough to sacrifice his life for the common welfare. Nanahuatl, though ill with an incurable disease, was also present. The thought of the illness which had taken hold of his body had for a long time been a source of worry to him and here his chance for usefulness suddenly dawned upon his mind. He throws himself in the flames, by which he is instantly consumed. Metzli, his lifelong companion, unable to bear the thought of their separation, at once imitates his example and is as speedily reduced to ashes. At that very moment there dawns upon the horizon the eagerly sought orb of light, flooding with its glorious rays the rejoicing crowd. To commemorate such an auspicious occurrence, its yearly anniversary was set aside as a day of feasting, and sacrifices to the sun and the moon, with which Nanahuatl and Metzli were thereafter respectively confounded, were offered.

For all that we know, the building of the pyramids may have been suggested by the same events that gave rise to the legend, which, like all other similar tales, must have been founded on some actual fact. In this instance it seems plausible to imagine that, at some time in the early history of the Toltecs or of their predecessors, a series of misfortunes had overtaken the race. Years of pestilence or of famine might have prevailed. Perhaps the scourge of war, waged unsuccessfully by them, had contributed to dwarf the influence of the race. It seems natural, at all events, to seek the explanation of the gloom that pervaded their regions in the occurrence of disasters such as will visit any race in the course of its life. Nor is there any reason to reject the hypothesis that would explain the reappearance of the sun by stating that the aforesaid bad times had ended and were succeeded by days of prosperity.

It should be borne in mind that normal conditions prevailing during short or prolonged periods of time are not the ones that give rise to legends or traditions. These originate rather in the unusual events that break the monotony of long-continued social conditions and, as such, naturally appeal much more forcibly to the minds of those they affect. Hence it is that our knowledge of unrecorded historical times is confined to dim notions of unconnected events, which perhaps should more correctly be considered as constituting either the end or the dawn of a certain period of uninterrupted uniformity. Similarly the advent of the Aztecs at Teotihuacan and their conquest of the Toltec dwellers, in the XI century A. D., coincides again with the rise of another set of traditions. One of the most widely spread of these is condensed as follows:

About that time, civil strife, famine and plague were rampant. Teotihuacan, of all cities, was the one most heavily afflicted. As usual on such occasions, the prominent townsmen as well as men of mark from the neighborhood convened together at the pyramids to resolve upon some course of action that would appease the anger of the gods. The first day of the convocation was spent in prayers to intercede for divine guidance. The

following evening a blazing altar was prepared at the foot of the Pyramid of the Sun, and terror-stricken victims led to it, in full sight of the assembled multitude, which had already begun its worship by preliminary dances, as it was wont to do. Suddenly there appeared in their midst a weird figure, which fell in line without a word, though not before having seized one of the awe-struck faithful, with whom he started to whirl around at a frightful speed until his unwilling partner had dropped down dead. This ghastly performance was repeated with several of the other onlookers, nor could their affrighted kinsmen muster sufficient courage to desert the ceremony. It seemed that a spell bound them to the spot despite the knowledge of probable death awaiting them. Towards dawn, after a countless number of the dead were lying on the ground, they saw the awful guest disappear as suddenly and as noiselessly as he had appeared and the carnage ended. On that day, however, the dwellers by the pyramids saw a vision; it was that of their ancestors who, rolling earthward through the clouds, announced the impending doom of the holy city. Such is the account of the event that immediately preceded the end of the Toltec supremacy, according to oral traditions found by the companions of Cortez in their adventurous march to Mexico.

These Mexican pyramids quite naturally recall the Gizeh monuments. But what a difference between the two! The evident signs of a relatively advanced stage of civilization in the latter are replaced in the former by obvious manifestations of a very inferior stage of culture. This fact, taken in conjunction with the older age of the Egyptian monuments, leads one to inquire why primeval civilization has been so slow in its progress on the American continent. Did man appear here at a later geologic time than in Eurasia, or else are the physical features of the interoceanic continent such as to determine slower progress?

Barring perhaps some South Sea islanders and some black tribes in Africa, the American Indian, comprising types seen in Canada down to the natives of Tierra del Fuego, represents today the lowest stage of human development. The civilization of the wildest Afghan nomad is as much above that of the Mexican peon as we ourselves are above the humble dweller of the valley of the Nile some 5000 years before the birth of Christ. Is this a proof of the agency of some powerfully retarding cause that has prevented development on the American continent? A comparison of American protohistoric monuments with contemporaneous types in Eurasia seems to indicate it. Such monuments in both instances are but manifestations of the ideals of the race by which they were built and the details of their construction may well be taken as an eminently proper gauge with which to measure the condition of these ideals.

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MYCENÆAN VASE FROM RHODES SHOWING DEVIL FISH DESIGN

THE DEVIL FISH IN ANCIENT ART¹

THE devilfish fills an important place in the diet of the inhabitants of the coast of the Ægean sea, the same place that the stock-fish fills with us. Cuttlefish are hung up in the bazars of the maritime cities on strings or are piled up on flat baskets, similar, with their stiff, grizzled tentacles, to skins slashed and tanned. They are not appetizing, but have lost the repulsive aspect of the slimy mass offered for sale on the docks where the fisherman has thrown them out in unloading his skiff. Alive, struggling in the meshes of the nets with which they were caught, or swimming, surrounded by their gyrating tentacles and the undulating mantle, turning on us their dull, projecting eyes through the glass of the aquarium of Naples where we see them as they are in the obscure depths of the sea—they are frightful. Indistinct shapes, obscure and complicated, which seem almost indecent to our esthetic sense, formed by the Greek influence and loving smooth, solid masses, justly charmed, by their strangeness, the imagination of the Far-East, whose artists have drawn from the

¹Translated for RECORDS OF THE PAST from the *Bulletin des Musées Royaux des Arts Décoratifs et Industriels à Bruxelles*, vol. VI, no. 7, April, 1907, by Helen M. Wright.

most rudimentary and strange animal forms their most splendid decorative effects.

Long habit has familiarized us with Chinese and Japanese arts and with the rhythm of their forms and colors, so different from the western harmonies. This has, doubtless, tended to lessen the astonishment which would otherwise be produced by the discovery upon the classic soil of Greece of a strange art, very animated, which was pleased to use certain of these forms which, they say, nature created to people our nightmares.

In fact, the devilfish and allied species have furnished to the art which is called Mycenæan, or that of the inhabitants of the Ægean Archipelago during the Bronze Age, some of their most characteristic images.

Naturally fishing was the principal occupation of these islanders, and we see that the products of the fisheries played a large part in the artistic representations; one of the earliest representations of the human figure (upon the foot of a lamp found at Milo) shows us fishermen carrying fish. In frescoes, flying-fish revolve in a background of coral and sea-anemones. Stone and terra cotta vases show us all the swarming life of the bottom of the sea—devilfish, cuttlefish, paper nautilus, jellyfish, starfish, shellfish, coral and *polipiers*. They are true submarine landscapes, reproduced in a bold and naïve time. The devilfish, with its tentacles which recall so strongly the spiral beloved by the decorators of that epoch, had an especial vogue, and innumerable are the objects it adorned with its image, more or less conventionalized.

Our collection of Mycenæan objects which is growing rapidly, thanks to purchases, exchanges and gifts, includes already a small engraved stone, found at Mycenæ by Messrs. Duvivier and Henebicq and presented by them, which is ornamented with a devilfish surrounded by its tentacles, provided with air-holes. There is also a superb cup decorated upon each face with a threatening devilfish, which gives an idea of the most beautiful products of Mycenæan ceramics. It is the vase which we reproduce here. This vase came from the island of Rhodes and was acquired with an important collection of antiquities, thanks to the kind intervention of Mr. Tonnelier, representing Antwerp, and Mr. Van de Velde, senior consul from Belgium to Rhodes. Its height is 9 in., and its diameter with the handles, 11 in. The figure is painted in brown-red upon the clear ground of the vase; the air-holes are indicated by white dots. The decorative conventionalization has extended far, and the figure has been composed in such a way as to adapt it to the form of the vase.

It does not matter to us here whether that representation was or was not something more than a simple decoration. In primitive art, the artistic side is originally secondary; it is a means, not an end, chosen for the service of certain magical and religious usages. It is not the highest species of animals alone which assumed a sacred character. Among the confused and obscure causes which have fashioned the beliefs of savages, utility played a large rôle. Now, the devilfish, being edible, was very useful, and the inhabitants of the Ægean were desirous of seeing it perpetuated and multiplied, and to that end representations, according to primitive belief, were efficacious. To this was added, perhaps, the strangeness of the animal and its

obscure life in the depths of the sea, which, with its swarming, multiform population, must have deeply stirred the primitive imagination.²

To be sure, the potter who, for the ornamentation of a vase, drew upon the mass of representations which were familiar to him, might have entirely lost sight of the primary significance of these images and have thought only of making a decorative work.

We wish to indicate only in passing, this point of view for defining the primitive character of Mycenæan art. Compared with the classic Greek art, it seems to have been created by savages admirably endowed and perfected by practice, with a prodigious capacity, rather than by artists conscious of the problems which beset the representation of the exterior world. If they produced art, it was without knowing it, as Mr. Jourdain made prose.

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THE AMERICAN EXCAVATIONS AT SARDES

THE Americans who have been making extensive excavations on the site of Sardes, the flourishing capital of the ancient Lydian Kingdom, have just closed their work for this season. While the three months work just completed can be looked upon as only preliminary, yet the results have been entirely satisfactory. What is supposed by many to be the Temple of Cybele, two pillars of which still remain standing, promises to be one of the largest temples in Asia Minor, if not in the world. Apart from the value of the work from an architectural standpoint, many valuable inscriptions have been unearthed. In some of the tombs opposite the Pactolus river a number of golden trinkets and pottery have been found, but most important of all was the discovery of a Lydian tablet, one of the three or four now known to exist. As no one, as yet, has ever been able to read this ancient language, the finding of this tablet, along with a fair prospect of unearthing many more, will add new zest to the study of such inscriptions.

During the past three months about 70 laborers have been employed daily. Something like a half mile of hand and horse railway track has been constructed for the purpose of removing dump earth. The house consisting of about a dozen rooms, with a small museum attached, is now practically completed.

Smyrna, Turkey, July 7, 1910.

ERNEST L. HARRIS,
Consul-General.

² We are, however, far from sharing the opinion hazarded by Mr. Hounay, a naturalist who is willing to recognize upon a Mycenæan vase where we see a devilfish and other animal forms, among them ducks, a representation of a primitive conception of spontaneous generation. (Perrot and Chepiez *Histoire, de l'art dans l'antiquité*, vol. vi, p. 924 et seq.) Recall in passing that at Trézenex in the Greek epoch a cult of the devilfish was produced (*Athenée*, vii, 103. Cf. de Visser, *Die nicht Menschengestaltigen Götter der Griechen*, p. 161) and that it appeared in the V century upon the coins of Erethrie in Eubœa.



NEAR VIEW OF THE RECENT EXCAVATIONS AT SARDES



GENERAL VIEW OF THE EXCAVATIONS AT SARDES

BOOK REVIEWS

GREEK ATHLETIC SPORTS AND FESTIVALS¹

IN VIEW of our present development of sports and the revival of Olympic games, an archæological work on Greek athletic sports is of general current interest and importance, a distinction which does not often fall to the lot of an archæological book. In *Greek Athletic Sports and Festivals* Mr. E. Norman Gardiner describes and discusses these sports showing the development of athletics among the Greeks from unconventional contests engaged in by everyone in the time of Homer to their decline in the II and III centuries B. C. Our directors of athletics would do well to consider the cause of decline in Greek athletics and take steps to avoid similar unfortunate developments.

The athletic spirit of Homer's time developed a desire for special meetings or festivals for competition and by the VI century B. C. these became so common that Mr. Gardiner considers this the "age of athletic festivals." The age of general competition developed a high average of athletic attainment and from 500 to 440 B. C. the author considers the "age of the athletic ideal." But soon professionalism and specialization crept in and supplanted the general active athletic spirit, and by 338 B. C. the decline in athletics became very marked.

The different festivals, such as the Olympic, Pythian, Isthmian, Memean, and the athletic festivals of Athens are considered in the closing chapters of Part I.

The second part of the book is devoted to the different forms of athletic sports, as the foot race, jumping, throwing the diskos and javelin, wrestling and boxing, and their stadia and gymnasia.

A bibliography is added, thus completing a volume of absorbing interest and permanent value.



UNIVERSITY OF CALIFORNIA PUBLICATIONS

The University of California has added a new series to its long list of publications—*Publications of the Academy of Pacific Coast History*. Seven numbers of Volume I have appeared during the past few months. They are: *The San Francisco Clearing House Certificates of 1907-1908*, by Carl C. Plehn; *The Official Account of the Portola Expedition of 1769-1770*, edited by Frederick J. Teggart; *Diary of Gaspar de Portola during the California*

¹ *Greek Athletic Sports and Festivals*. By E. Norman Gardiner, M.A. pp. xxvii, 533; illustrated. \$2.50 net. London: Macmillan and Co. 1910.

Expedition of 1769-1770, edited by Donald E. Smith and Frederick J. Teggart; *The Narrative of the Portola Expedition of 1769-1770* by Miguel Costanso, edited by Adolph van Hemert-Engert and Frederick J. Teggart; *The United States Consulate in California*, by Rayner W. Kelsey; *The Diary of Patrick Breen, one of the Donner Party*, edited by Frederick J. Teggart; and *Papers of the San Francisco Committee of Vigilance of 1851*, Part I, edited by Porter Garnett.

Of the University of California Publications in American archæology and ethnology, two numbers have been received recently—*The Ellis Landing Shellmound*, by N. C. Nelson and *The Chimariko Indians and Language*, by Roland B. Dixon.

The University of California is to be commended for its activity in so diligently studying and recording the history and archæology of the Pacific Coast.



THE HISTORIC EXODUS²

UNDER the title of *The Historic Exodus*, volume II in the series *Researches in Biblical Archæology*, Dr. Olaf A. Toffteen presents a volume dealing with the Hexateuch. The greater part of the volume is devoted to textual criticism based on slightly modified theories of the "higher critics" while archæology occupies a secondary position, usually only where its discoveries have forced changes in the views, especially the absolutely established views, of the "higher critics."

The whole structure of his argument is based on the division of the text of the Hexateuch into 4 documents as agreed upon by "critical scholarship." By this he evidently means technically "higher critics" for that is the only class of critical scholars who have agreed on this division. It seems to us that the recent work of Harold M. Wiener on the Pentateuch has completely demolished the principal basis for this division into the J. (Javistic), E. (Elohistic), D. (Deuteronomic) and P. (Priestly) documents, thus rendering the greater part of this volume obsolete.

² *The Historic Exodus*. By Olaf A. Toffteen, Ph.D., Professor of Semitic Languages and Old Testament Literature, Western Theological Seminary. Pp. xxii, 339. Illustrated. \$2.72, postpaid. Chicago: The University of Chicago Press. 1909.



EDITORIAL NOTES

SECRETARY OF ARCHÆOLOGICAL INSTITUTE OF AMERICA.—Professor Mitchell Carroll had been appointed general secretary of the Archæological Institute of America. He has been actively connected with the Institute since 1902 when the Washington branch of the organization was formed.

ANCIENT NORWEGIAN COINS.—In April the Archæological Museum at Christiania received a valuable and interesting collection of 900 Norwegian silver coins of the epoch of Erik Magnussen, XIII century. The coins are all alike and in good condition. They were found by workmen in a field at Bergen.

LOSS OF HISTORICAL COLLECTIONS AT ALBUQUERQUE:—On May 23, Hadley Hall, the home of the science department of the University of New Mexico, at Albuquerque, was destroyed by fire. The Indian historical museum and geological collection were lost entirely. Several collections of Southwestern relics of priceless value were destroyed.

STATE PARK IN WISCONSIN.—The State park board of Wisconsin has acquired nearly all the lands contiguous to Devil's Lake. This means the permanent preservation by the state of several very interesting prehistoric mounds. The people of Wisconsin are to be congratulated upon the accomplishment of so important a result, for which several organizations in the state have been working during the past 4 years.

MOVEMENT TO MARK A MOUND IN MILWAUKEE.—The Wisconsin Archeological Society has requested the city of Milwaukee to mark with a tablet the last of the group of Indian mounds located on the site of Lake Park. The mound in question is 40 ft. long and 2 ft. high. The matter is under consideration. The same society has asked the city of Madison to mark a small group of conical mounds on the north side of Lake Wingra.

AUTOBIOGRAPHIC ELEMENT IN LATIN INSCRIPTIONS.—Part 4, Volume III of the University of Michigan Studies, Humanistic Series, is just received. It consists of a paper on the *Autobiographic element in Latin Inscriptions* by Henry H. Armstrong, who in 1907 wrote two articles on the same subject for RECORDS OF THE PAST (vol. vi, pp. 111-116, 141-145). This paper is more detailed than the former. The value is much enhanced by numerous references to published works and to Roman monuments and epigraphs.

PARISIAN LAW AGAINST STICKING BILLS ON HISTORICAL BUILDINGS.—“On April 22 the Paris *Journal Officiel* published the text

of a law forbidding the sticking of bills and advertisements on monuments and buildings officially recognized as historical, and in sites of which the picturesque and artistic character has been recognized in accordance with the law of 1906. Advertisements are also forbidden in the neighborhood of such sites or monuments, the prohibition zone being defined by prefectorial decree." Fines are to be imposed for breaches of the law.

SYRIAC MANUSCRIPTS AT HOMS.—According to the *Globe*, London, Fathers Jalabers and Ronzevalle of the University of St. Joseph, Beyrout, have found a number of Syriac manuscripts in the Jacobite Monastery at Homs. Among them is one containing a Syriac version of the Gospels, on parchment, in the script known as *estrangelo*. The text is in double columns and follows closely that of the famous Peshito version. It is thought to be a very early manuscript. An early letter of Eusebius of Cæsarea addressed to Carpius is also among the manuscripts found.

THE SCULPTURES OF THE PARTHENON.—“A monumental work in more senses than one is about to be issued by the Trustees of the British Museum. It deals with *The Sculptures of the Parthenon*; and has occupied several years in preparation. It has of necessity to be bulky and issued in portfolio form, but its completeness may be gaged by the announcement that it will contain 95 full-page plates and 144 blocks and diagrams. The Parthenon frieze will take more than half of this. The text has been written by Mr. A. H. Smith, Keeper of the Greek and Roman Antiquities.” (*Antiquarian*, London, April, 1910.)

A COLLECTORS' SOCIETY FOR NEW YORK.—A number of our subscribers have expressed a desire to organize in New York City a society or club for collectors of antiquities. It seems to us that there ought to be quite a number of persons who might be interested to form such an organization. We consider it one of the missions of RECORDS OF THE PAST EXPLORATION SOCIETY to encourage and assist whenever possible the organization of such local societies. Mr. Otto Spengler, 352 Third Avenue, New York City, is specially interested in starting such a club and he would greatly appreciate it if others who feel an interest in collecting antiquities would communicate with him.

PROFESSOR SELLINS AT JERICHO.—A Berlin newspaper correspondent, according to the *Antiquarian* [London] reports that Professor Sellins has sent home particulars of his excavations at Jericho. “He states that he has been successful in bringing to light the ruins of the fortifications of the pre-Israelitish city, consisting of an inner and an outer wall. The inner wall was double and appears to have been strengthened at intervals with towers. The excavators found in successive strata the remains of dwellings of the pre-exile, post-exile and Byzantine periods and below them all, quantities of flint implements dating back, in Professor Sellins's estimation, to about 4000 B.C. Some distance away traces of Jewish settlements belonging to a period about 800 years B.C. were found. These remains were

in a good state of preservation and included a wall still standing to a height of 6 ft. Here again various ancient implements and utensils were recovered, while lower down the foundations of a palace of extremely ancient date were encountered."

JACOB'S WELL.—Rev. Asad Mansur, of Christ Church, Nazareth, in the April *Statement of the Palestine Exploration Fund* questions the identification of Jacob's Well. He comes to the conclusion that the so-called well is only a cistern which is dry in summer and filled only with surface water in winter. Mr. Mansur is of the opinion that the well where our Lord conversed with the woman of Samaria was in the northern part of Shechem. Opposite that quarter of Shechem, now known by the name of Hâret-el-Hableh, there is an opening in Mount Ebal surrounded with gardens which he thinks is the real site of Jacob's Well. A well there is called "the Well of the Prophets." From his reasoning it seems that the general locality which he suggests is more probably correct than the generally accepted site.

DAILY LIFE OF THE BABYLONIANS.—Many of the Babylonian letters translated by Abbé Martin are of special interest as they show the daily life of the Babylonians in the age of the Persian conquest, and its striking similarity to that of most Oriental peoples today. "There was the same oppression by the officials, whether religious or civil, the same unavailing complaints by the victims, and the same jealousies and defamations of character. The High Priest of Sippara, as M. Martin observes, appears in a particularly bad light; 'one of his subordinates is forced to keep the royal horses at his own expense; another, a scribe, he refuses to pay for work done; he interferes in judicial affairs, and is not afraid to extend his protection to a murderer.'"

ANCIENT ROMAN SHIP NEAR CHRISTCHURCH, HANTS, ENGLAND.—In March, 1910, portions of a burnt, mud-buried ship were discovered in the harbor near Christchurch, Hants. At first it was thought to be a Viking ship, but later it was considered as Roman. A small incense cup or vase was found, which Dr. C. H. Read of the British Museum declares is of Roman date. It is bright red and wheel-turned. Although broken, it can be restored as most of the fragments were recovered. It is $2\frac{5}{8}$ in. in diameter, $3\frac{1}{2}$ in. high with a neck 1 in. long. It is of graceful outline and proportions. More than 20 articles of iron, bronze and pottery were found as well as fragments of human remains. This had not been considered as a site occupied by the Romans, so this find is important as indicating such occupation.

SUN TEMPLE ON SITE OF MEROE.—It is reported that Professor Garstang has unearthed the Sun Temple mentioned by Diodorus on the site of the ancient Meroe. The building is unique, showing Greek influence and contains sculptures representing King Ergamenes's victories and a triumphal procession. There is also a list of the tribes inhabiting the districts of the southern Sudan. The sanctuary of the temple is said to be lined with

enameled tiles. It is claimed that the value of the Meroitic letters is established and that the discovery shows that the alphabet which Ergamenes used was modeled on the Greek. The Temple of Amon at Meroe has been further excavated. It appears to be of much greater extent than had been supposed. It is claimed that Netek-Amen restored the temple. There were many inscriptions and statues.

SPECIAL EXHIBITS IN THE MUSEUM AT SANT FÊ:—The Directors of the Museum of American Archæology at Santa Fé include a special exhibit each week in the scheme of management. The collections chosen for such special exhibits will be ones of exceptional interest. The first so displayed in May was a rare collection of ornaments and idols of jadeite made by the ancient peoples of Old Mexico, with two Chinese jades for the purpose of comparison. It was long thought that the Chinese were the only ancient lapidaries capable of working jade, but now it is known that many forms of jadeite are native to America and that it was carved by the Mayas, Zapotecs, Aztecs and others. The collection exhibited was from southern Mexico, the idols being from the state of Oaxaca. The ornaments were from tombs near the ancient Aztec temple of Tepoztlan, in the state of Morelas. The precision with which the small ornaments have been sculptured is remarkable.

ARTIFICIAL ISLANDS IN SCOTLAND.—At the December, 1909, meeting of the Society of Antiquaries of Scotland, Rev. Odo Blundell described the results of his examination of artificial islands in the Beaully Firth and in the fresh-water lochs in the Highlands of Inverness-shire. Carndhu, an island in Beaully Firth is composed of boulders with a number of beams of oak running through the rubble, one of which measures 9 ft. in height by 2 ft. in diameter. Cairntire, two miles east, shows few remains now. In Loch Bruiach, 10 miles south of Beaully and 1000 ft. up, is an island of which 5 large logs, each about one foot in diameter, were found, as well as beams and ties. The logs radiated from the center of the island, and the cross-ties were fixed with wooden pins. In Loch Garry are two islands one of which has a causeway from the shore, and no wooden beams visible. The other showed long timbers embedded in rubble. Numerous other examples were cited.

NEOLITHIC REMAINS AT STUSTON, SUFFOLK.—At the December (1909) meeting of the Prehistoric Society of East Anglia a paper by Mr. A. Mayfield on *Neolithic remains at Stuston* was read. Noting the similarity of Stuston Common to certain Neolithic sites, Mr. Mayfield investigated and on his first visit found a flint saw, a button-scraper and two or three pot-boilers. The number of finds in subsequent visits reached 170. In some of the gravel workings about 10 in. below the surface, were flakes, pot-boilers and fragments of sun-baked pottery. The implements seem to have been made from the pebbles of the gravel, and cores and flakes were of irregular shape. Seventy-nine per cent of the implements had part of the outer crust remaining, while 19 specimens had striæ. In 29 of 91 cases

in which the bulb of percussion was evident, a portion had been removed either in striking off the flake or by an after-blow. An absence of the various degrees of patination exhibited by neoliths from other sandy sites in the county was noted and as an explanation it was suggested that the spot was occupied only briefly.



INSCRIPTION FROM NABLUS

A SAMARITAN TABLET.—The Samaritan tablet reproduced above, although discovered many years ago, is of current interest in connection with the article on the Samaritans which appeared in *RECORDS OF THE PAST* for May–June, 1910. The tablet is a hard alabaster or limestone, 16 in. high, 14 in. wide, 2½ in. thick and was intended to be set up in some Samaritan synagogue. The text is an abbreviated form of the decalogue. It was found at Nablus and is now preserved in the Museum of the Leeds Philosophical and Literary Society, England. Mr. William Wright of Queen's College, Cambridge, considers it as about 400 years old, or possibly older. The following is Mr. Wright's translation of those parts which are legible beginning with line 2:

- (2) *Honour thy father and thy mother. Thou shalt do no murder.*
 (3) *Thou shalt not commit adultery. Thou shalt not steal.*
 (4) *Thou shalt not bear false witness against thy neighbour.*
 (5) *Thou shalt not covet the house of thy neighbour.*
 (6) *Thou shalt not covet the wife of thy neighbour.*
 (7) *And thou shalt build there an altar unto Jehovah thy God.*
 (8) And thou shalt write upon the stones *all the words of this law very plainly.*
 (10) Moses *commanded* unto us a law, an inheritance for the assembly of Jacob.

The similarity of this tablet with one described by Professor Roediger in 1845 makes it possible to supply the words which are indistinct on this tablet. The words in italics are translations from this tablet; the others are supplied from the other tablet and from the context.

EXPEDITION OF THE SCHOOL OF AMERICAN ARCHÆOLOGY TO GUATEMALA.—In April of this year an expedition, consisting of Professor Sylvanus G. Morley, Professor Jesse Nusbaum and Doctor Edgar L. Hewett, left Santa Fé for Guatemala and Honduras. The work opened up better than they had expected. The plan was to select a site as a base for further work in studying the southern Maya culture, which occupied the basin of the Motagua river in Guatemala and Honduras. This older branch of the Maya people excelled all others in certain arts, especially that of monumental sculpture, and progressed very far in the art of hieroglyphic writing.

The *New Mexican Review* (Santa Fé) quotes Doctor Hewett in respect to the expedition as follows:

The two principal seats of the southern Maya civilization were Quirigua, in Guatemala, and Copan in Honduras. These places were not cities of residence, but religious centers—holy cities—where the temples, sculptures and monumental records of the people were set up in a form that has lasted through the ages, and about which, probably for many miles, were clustered the ordinary houses of the people, doubtless built of perishable material, such as bamboo, palm, etc., and of which all trace has disappeared with the exception of mounds, which are to be found for miles in every direction.

It so happened that on our arrival in Guatemala it immediately became possible for us to secure possession of the site of the old city of Quirigua, owing to the extension of the plantations of the United Fruit Company, which has recently acquired large tracts of the heavily forested lands of the Motagua valley with a view to converting them into banana fields. With a liberality and an appreciation of scientific research that can not be too heartily commended, the officials of the company proposed to place the site of Quirigua under the control of the American school. We were authorized to survey out a tract of land including all the ruins; to surround it with a road 20 ft. in width; do such clearing as was necessary for the opening up and protection of the ruins, and to do whatever seemed best for the preservation and investigation of this, one of the richest prehistoric sites on the American continent.

The operations planned will extend over a term of at least 5 years. The first work consisted in making the survey necessary for the segregation of the site. A tract of 80 acres was surveyed out and this we have named Quirigua Park. The forest covering the valley in this region consists of trees of enormous size and of

almost every variety known to the tropics. Besides this there is a well-nigh impenetrable jungle of under-brush, the luxuriance of which can hardly be comprehended by one who has not attempted to penetrate it. This was cleared in the vicinity of the mountains, so as to protect them from the injurious effects of the vegetation, and sufficient of the larger growth of timber cut away to protect the ruins from falling trees. Certain parts of the park where there are no ruins are left in their native condition in order to preserve a representative area of that most interesting of natural phenomena—a tropical jungle. It will also serve as a preserve for the myriads of tropical birds, mammals, etc., which inhabit the region.

With a force of about 50 natives we made the preliminary clearing of the park. The final landscape work still remains to be done. The monuments, which are among the most remarkable ever found in America, were cleared, the moss removed from them, photographs made, the preliminary steps taken for the preservation of those which are standing, and for the setting up in the future of those which have been thrown down, probably by earthquakes. This can be done only after an extension from the Guatemala Northern railroad is laid to the park, and the railway wrecking machinery made available for lifting the heavy stones, for some of these sculptured monuments are as much as 26 ft. high and weigh from 40 to 50 tons. So far as I know they are the largest stones ever handled by the prehistoric races on the American continent. The quarries from which they were obtained are to be found in the hills a few miles away. As there was no machinery in ancient times they could have handled these enormous blocks only by means of vast numbers of men.

The work of setting up the monuments, and excavating the temples will begin next January and continue for a term of years. I believe that a sanitary system can be developed which will render the place as healthful as the Isthmus of Panama has become since the government took charge. That place would now make a good health resort and there is no reason why Guatemala should not be made just as healthy.

After finishing the work that could be done this year at Quirigua, we made a short expedition into Honduras to the old city of Copan. Here the ruins are more extensive than at Quirigua, though the sculptures are not in as good a state of preservation, owing to the fact that here the material used was soft trachyte, while at Quirigua it was a good quality of sandstone. As an art city Copan is peerless in prehistoric America. No where else did monumental sculpture flourish to such extent. While the monuments do not equal in size—by thousands of pounds—those at Quirigua, yet because of the more favorable material the art attained a higher level. In richness of decoration, depth of relief carving and general execution, these sculptures were unequalled in the art of ancient America. . . .

It is a pleasure to say that our work meets with the most cordial encouragement from the governments of Guatemala and Honduras. No pains were spared by the officials to facilitate our work in every possible way, and to afford us, under all circumstances, every assistance that we might need.





OLD CAVES OR PIT-DWELLINGS NEAR FLAGSTAFF, ARIZONA

RECORDS ^{OF} THE PAST

VOL. IX



PART VI

BI-MONTHLY

NOVEMBER-DECEMBER 1910



A NEW TYPE OF SOUTHWESTERN RUIN

IN my studies of ruined rooms and dwellings constructed by the prehistoric Indians of Arizona, I have found several examples that cannot be satisfactorily referred to any of the several types from that state recognized by students of these habitations. Some of these constructions are well known and have been grouped with the so-called cavate lodges or artificial excavations in the sides of cliffs, which, it must be confessed, they resemble in some respects. Many are situated on top of cliffs and are naturally, from their position, called cliff-dwellings. The majority, however, are not in cliffs but in the plain, excavated below the surface in a broken country, when they are often sheltered by protruding rocks of low altitudes. Those that are situated in these localities are neither pueblos nor cliff-houses, being without structural affinity with any rooms constructed in relief or above ground. It has seemed to me that the closest relationship of these rooms to known ruins is with a group of underground constructions called by archæologists "pit-dwellings," a type hitherto not sufficiently differentiated from other prehistoric dwellings in the Southwest.

The structure of the simplest form of Arizona pit-dwelling has affinities with other examples of this type widespread in the Old and New Worlds. Pit-dwellings may be defined as excavations in rock or earth, having a vertical entrance through a roof that is level with the surface of the ground or slightly raised above it. The bounding walls of such rooms are constructed of clay or may be formed of masonry which does the double duty of supporting the beams of the roof, and forming the walls of the

dwelling. In pit-dwellings where the plastering is not applied directly to the wall of the excavation, upright logs with osiers woven between them form the support of clay plastering, thereby strengthening the structure and preventing the caving in of the ground in which the room is excavated. Ordinarily the simplest form of pit-dwelling is a hole in the earth forming a chamber that may possess mural banks or niches, but the more complicated examples have side entrances opening from the main pit into secondary smaller rooms. From necessity external entrance into a pit-dwelling is through the roof and is accomplished by means of notched logs or ladders. In a pit-dwelling of this simple kind the firehole consists ordinarily of a depression in the middle of the floor situated under the entrance into the room, which serves for the exit of the smoke. In the more complicated examples this fire-place is in one corner, and has a special vent in the roof above, for the passage of the smoke.

The essential and important structural difference, from a classificatory point of view, between cavate lodges and pit-dwellings was recognized over 10 years ago in my report,¹ on certain caves near Flagstaff, Arizona, although at that time the word pit-dwelling was not used to designate the latter. A recent examination of ruins, similar in form to those near the San Francisco mountains, in the Little Colorado valley, confirms my belief that this designation should be adopted and would be advantageous to future students of the antiquities of Arizona.

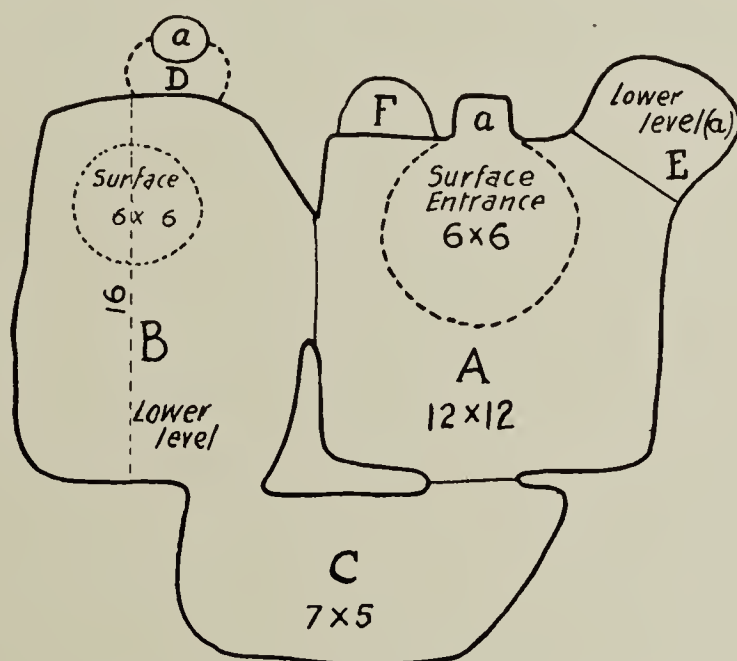
As one descends from the great lava flows and cinder beds which cover the country on the north and east sides of the San Francisco mountains, and emerges from the belt of pines and cedars into the deserts bordering the Little Colorado, he encounters a treeless zone where the rock foundation underlying the lava is mainly red and white sandstones. At intervals there rise out of the ground low hills—remnants of a superficial formation that has survived the great erosion, evidences of which are everywhere conspicuous. These elevations, seldom more than 20 ft. high, are often crowned with ruins of old pueblos, examples of which are especially abundant near the Black Falls. Between them are situated canyons and plains, the beds of the former, often level, being made so by deposits of earth, cinders and soil, furnishing suitable sites for excavated pit-dwellings. These subterranean rooms are often accompanied by ruined walls which sometimes rise several feet above ground. A common form of these pit-dwellings consists of a series of rooms or several subterranean chambers arranged along the base of a low elevation,² the rocky sides of which form a shelter for the entrance into the subterranean dwelling. A close examination will reveal the fact that almost every ruin in this region is accompanied by several of these pit-dwellings situated at the base of the low elevations on which the ruins stand. Another and the most numerous form of the type is unaccompanied by any ruined walls above ground, but is simply a row of pit-dwellings generally in the lee of a low cliff which served to protect the entrances from wind and sandstorms. At one place in this locality as many as 13 of these pit-dwellings were found arranged in a row, side by side,

¹ *Twenty-second Annual Report, Bureau Amer. Ethnology.*

² The Turkey-Tanks caves closely resemble in some respects the pit-dwellings at the Black Falls.

there being no vestiges anywhere of accompanying walls above ground. Each room in such a cave is now full of fallen rocks and soil, especially drift sand, so that only the tops of the wall are seen, indicating that the buried chambers were rectangular, with rounded corners, or circular in form. From the great number of these pit-dwellings near Black Falls it seems probable that they occur elsewhere along the Little Colorado.³

A more complicated form of pit-dwellings known as the Old Caves occur in the lava beds or on an elevation marking the rim of a very much eroded volcano about 12 miles from Flagstaff, Arizona. These caves, sometimes designated Coconino caves, have been known for many years and have been repeatedly described by travelers and archaeologists. By a majority of writers they are classified as cavate dwellings, being asso-



PLAN OF PIT-DWELLINGS—OLD CAVES

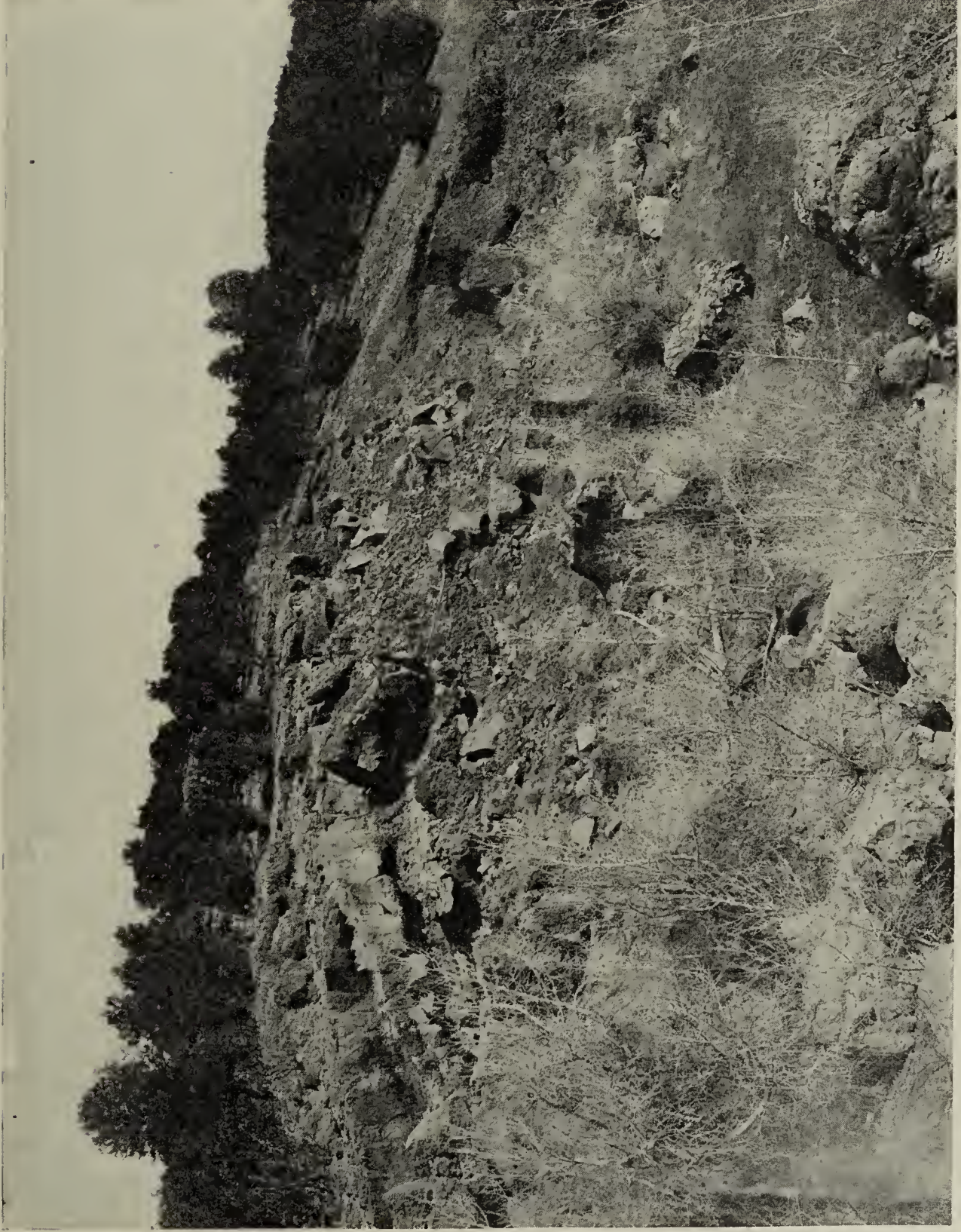
ciated with this type so well represented elsewhere in New Mexico and Arizona. A comparison of these structures reveals the fact, which a scientific study confirms, that there is a marked structural difference between some of these caves of the Flagstaff region and cavate dwellings of the Verde Valley or even with the so-called New Caves, not far away. This difference is primarily in the position of the entrances. Both forms are artificial excavations in volcanic formations, but while in the Old Caves the entrances are from above, those of the New Caves, as in the Verde Valley, are from the side. On this account the Old Caves are regarded as belonging to the new type or pit-dwellings, well represented, as we have seen, near the Black Falls. The Old Caves are situated on the summit of a lava hill, quite precipitous on the sides, and are excavated in a lava conglomerate which could be very well worked with stone implements. They are prehistoric or at all events were uninhabited when first visited by white men.

³ The general resemblance in objects from cave and pueblo ruins to those found near these pit-dwellings would indicate a similarity in culture, but the significance of that likeness has not yet been carefully investigated.

When we examine the flat top of the hill in which these pit-dwellings have been excavated we find ourselves in the midst of a number of broken down walls rising in places several feet above the surface. These walls are constructed of lava blocks roughly hewn and laid in the form of rudest masonry. By a little study we are able to trace out a number of rectangular enclosures arranged side by side in rows at varying levels, forming terraces, the whole assemblage having a ground plan not unlike a checker board. In certain places some of the component squares are larger and more irregular than the others, their shape suggesting courts or plazas. Many of the enclosures are found to have a hole in the middle of the floor which passes to an excavation below. This hole is the entrance through which one can pass into a pit or subterranean chamber larger than the entrance, which communicates with secondary rooms through lateral openings. There are small openings, in addition to the entrance, in the roof of the pit which served for ventilators or chimneys. Passing through this narrow hatch-like entrance into the enlarged pit-dwelling we find ourselves in a room often showing signs of plastering, having a floor and fire-place, and in one or two instances remains of a bank on one side. In the walls of this subterranean room there are openings leading into other smaller chambers showing the existence of not one but several chambers, or a suite of rooms so to speak, opening into the pit, the main entrance to which is from the roof, the 2 passages into the other rooms being lateral. In many instances this vertical entrance has now lost its likeness to a hatchway, having been enlarged by breaking of the floor which has filled the room with fallen rocks, so that the original pit entrance is no longer recognizable. In others, however, the hatch is still unbroken and the roof of the subterranean room is intact.

From this superficial account of the construction of the typical pit-dwelling shown in the Old Caves we may pause for a moment to consider the probable conditions when they were inhabited. On the summit of the lava hill was a series of low one-story buildings arranged in series, many of the rooms with openings in their floors through which one could pass to subterranean domiciles by means of a vertical passageway. Whether these walls above ground had roofs and enclosed rooms is not evident. There is some evidence that they had, and at all events we can rightly suppose the people used the enclosures for various household purposes; their walls no doubt served for defense. There can be no question that the cellars under these enclosures were sometimes inhabited and were not simply storage places. If they were inhabited the presence of a roof on the walls above ground would certainly greatly obstruct needed light for which the fire in the fire-place was inadequate.

A comparison of one of these pit-dwellings with the main room of the New Caves shows few differences save one which is destructive, viz: the possession of a vertical entrance and surrounding wall of the pit-dwelling in one case and of lateral entrances in the other. I am inclined from this and other reasons to regard these two forms of cavate dwellings as contemporaneous, or, in other words, we have here as in all artificially excavated rooms, one, the pit-dwelling, dug down from the surface, the other dug into



TURKEY-TANKS CAVES, ARIZONA



NEW CAVES—CAVATE DWELLINGS NEAR FLAGSTAFF, ARIZONA

the side of a cliff. The latter type may well be a cliff-dwelling, and the former happens, in this instance, to have been excavated on top of a cliff. This position not being essential for its construction, it is not necessarily a cliff dwelling, or even a cave-dwelling; unless we call a hole in the ground a cave. It answers the requirements of a pit-dwelling belonging to a group widely distributed in different regions of the earth.

We find that examples of this new type of ruins are not confined to prehistoric Arizona but occur in several localities in New Mexico, and I predict renewed exploration will bring to light many more, for they appear to be widely distributed.

The pit-dwelling type appears to be a very old one in America and is found in California and on the west coast of North America. Nor are pit-dwellings confined to the plateau region of the United States, but have counterparts on the plains east of the Rocky Mountains even in modern Indian life.

The Arizona pit-dwelling seems to have been abandoned as a habitation in prehistoric times, but many survivals of them exist even in pueblos still inhabited. These survivals are archaic ceremonial rooms known as *kivas*.⁴

In conclusion it may be well to enumerate the different architectural types of prehistoric buildings that have been recognized in Arizona. The most extensive of these are the Compounds or Great Houses of the Gila-Salt rivers and their tributaries, the typical form of which is a massive block or blocks of buildings surrounded by a wall as in Compound A of Casa Grande. This type, sometimes confused with a second type, the puebloan, is radically different from a pueblo of either Hopi or Rio Grande agriculturalists, and is accordingly designated by a distinctive term. The pueblos whether free in the open or situated on top of a talus backed by a precipice or protected by the roofs of natural caverns illustrate a clearly defined

⁴ The structural character and relationship of the pit-dwellings of the Little Colorado will be amplified in a comprehensive article on the "Antiquities of the Little Colorado" which is now in preparation my purpose for the present being to call attention to this new type.

type, which merges sometimes into dwellings artificially excavated in the sides of cliffs. Artificial caves form a third type which includes cavate dwellings or cavate lodges. The distinguishing structure of the simplest type of pit-dwellings is their subterranean position and consequent roof entrance, as indicated above. This form is the subterranean counterpart of the building above ground, and its walls, like its representation in relief, may be of stone or of more fragile construction, both of which are found among prehistoric habitations. The majority of ruined habitations in Arizona, excluding Navaho and Apache *hogans* or such structures as Pima dwellings called *kis* and other like structures, may thus be referred to one of four types: (1) Pit-dwellings; (2) Cavate dwellings; (3) Pueblos; (4) Compounds. These, like all types, are sometimes pure, but more often mixed; examples found in different regions showing composition of several in one and the same community building. Thus the puebloan type may occur in the open, on mesa tops or talus slopes, with or without artificial caves below or behind them, or they may be situated within natural caves. They may possess one or more excavations of the pit-dwelling type, among the component rooms, but morphologically the radical differences existing among these four types can be readily recognized, even when combined.

J. WALTER FEWKES.

Washington, D. C.



GREEK RELICS IN RHODESIA.—It is said that Doctor Carl Peters reports finding for the first time definite first-hand traces of the presence of the ancients of classical and preclassical times in the gold mining districts of South Africa.

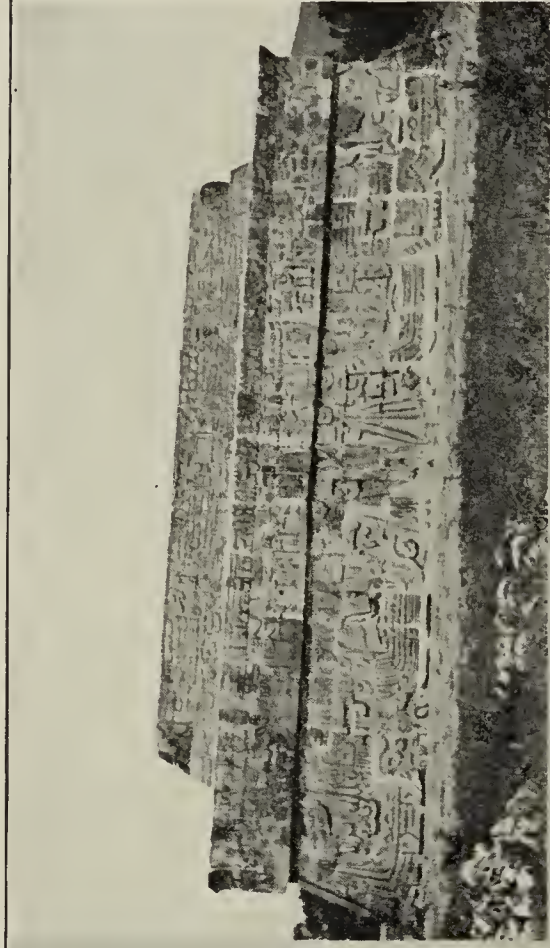
The New York *Times* quotes him as saying:—

The tablet in question was found by one of my men in a slave pit to the south of Inyanga, north of Umtali, (Rhodesia). The district contains hundreds of these pits, from 20 to 25 ft. deep, in which the ancients kept their slaves. The tablet was evidently made of cement, and had been cut in two, clearly while it was soft, the letters on it being in no way damaged.

The characters look to me like Greek letters, but other experts say they are Graeco-Phoenician. I take the tablet to be the half of an ancient passport, one portion of which was retained by the master and the other handed to the messenger.

I also discovered, near Zimbabwe, a brass figure of Pan, 6½ in. long, very similar to the figures found at Pompeii, thus proving Greek influence in South Africa apparently at a later period than the tablet I spoke of. These and other discoveries are to my mind further proof that in South Africa there has been a continuation of different ancient civilizations.

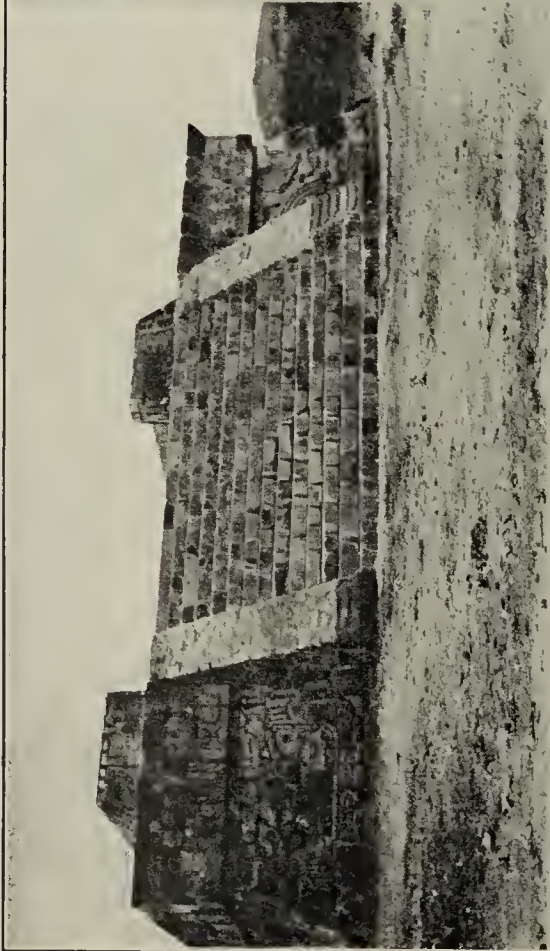
It has also been shown that during all these periods gold mining was carried on. Apparently this was begun by natives of the soil, probably Bushmen, and it seems likely that the first Semitic people who appeared on the scene were only traders in the precious metal.



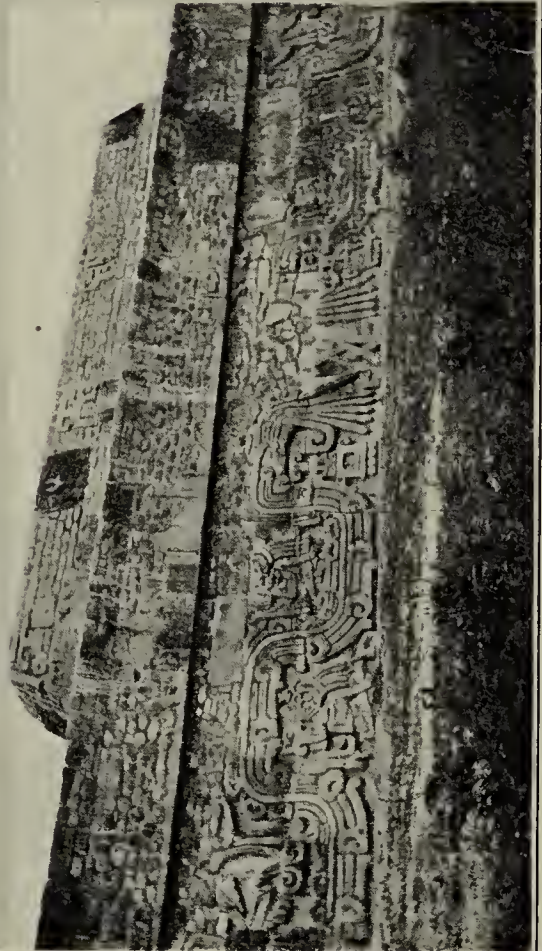
REAR VIEW OF THE TEMPLE OF THE PLUMED SERPENT
AS RESTORED



EASTERN AND NORTHERN FACES OF THE TEMPLE OF
THE PLUMED SERPENT



FRONT VIEW OF THE RESTORED TEMPLE OF THE
PLUMED SERPENT



SOUTHERN FACE OF THE TEMPLE OF THE PLUMED
SERPENT

XOCHICALCO

ABOUT 18 miles south of Cuernavaca at an altitude of 4000 ft., lies the ancient "Hill of Flowers,"—Xochicalco,—crowned by the ruins of the same name which at the present time the Mexican Government with laudable motive but doubtful result, is beginning to restore under the direction of Señor Leopoldo Batres.

The surrounding country is seamed by great barrancas and strewn with loose volcanic rock, which in the absence of anything that could be called a road, fortunately make the approach somewhat discouraging to the predatory tourists of to-day who descend in hordes upon Cuernavaca. Hence it is that although only a short distance from this point, the ruins are comparatively infrequently visited though widely known.

The valley in which they are situated, surrounded by its great chain of mountains, is in reality the first of a series of giant steps leading downward from the Mexican plateau to the Pacific littoral. Partially across its median line running from east to west extend a number of low mountains in a break of which lie two adjacent hills from 300 to 400 ft. in height. Upon the summits of these the main ruins are found, the lower or most westerly hill containing the largest and by far most important remains. About 3 to 4 miles distant rises the eastern escarpment of the transverse line of mountains, around whose summit extends a great terrace, undoubtedly of artificial origin, though concerning the ruins, which its presence in all probability denotes, the writer is unfortunately unable to speak, as it was impossible at the time to visit them.

Xochicalco has been principally noted for the bas-relief sculpture that winds its serpentine folds around the sides of the well known temple on the smaller of the two hills before alluded to. This, while of a high order of excellence, to be described later, is inferior to the comprehensive plan and extent of the remains as a whole which frequently have been overlooked in admiration of this one detail.

Standing upon the top of the now reconstructed temple, the view that spreads before the eye is indeed grand and inspiring—far to the north, beyond the red-tiled roofs of Cuernavaca, nestling amid the vivid green of the foliage, lies the great mountain barrier that separates this section from the Valley of Anahuac with its ruins and temples of the cultured Toltecs, the civilized yet blood-thirsty Aztecs, and the other kindred Nahuatl tribes who doubtless poured in ages past through the great gap in the mountains that faces Xochicalco to devastate the fertile fields stretching beyond, which were later to be given by Charles V to Cortez as part of the domains subject to the great Marquis whose prowess in turn had won them for Spain.

To the northeast rises the neighboring hill with a stately roadway approximately 30 ft. in width leading in a straight line to the elaborate temple ruins on its summit; while beyond, across the barrancas towers the terrace-crowned peak that forms a part of this great triumvirate.

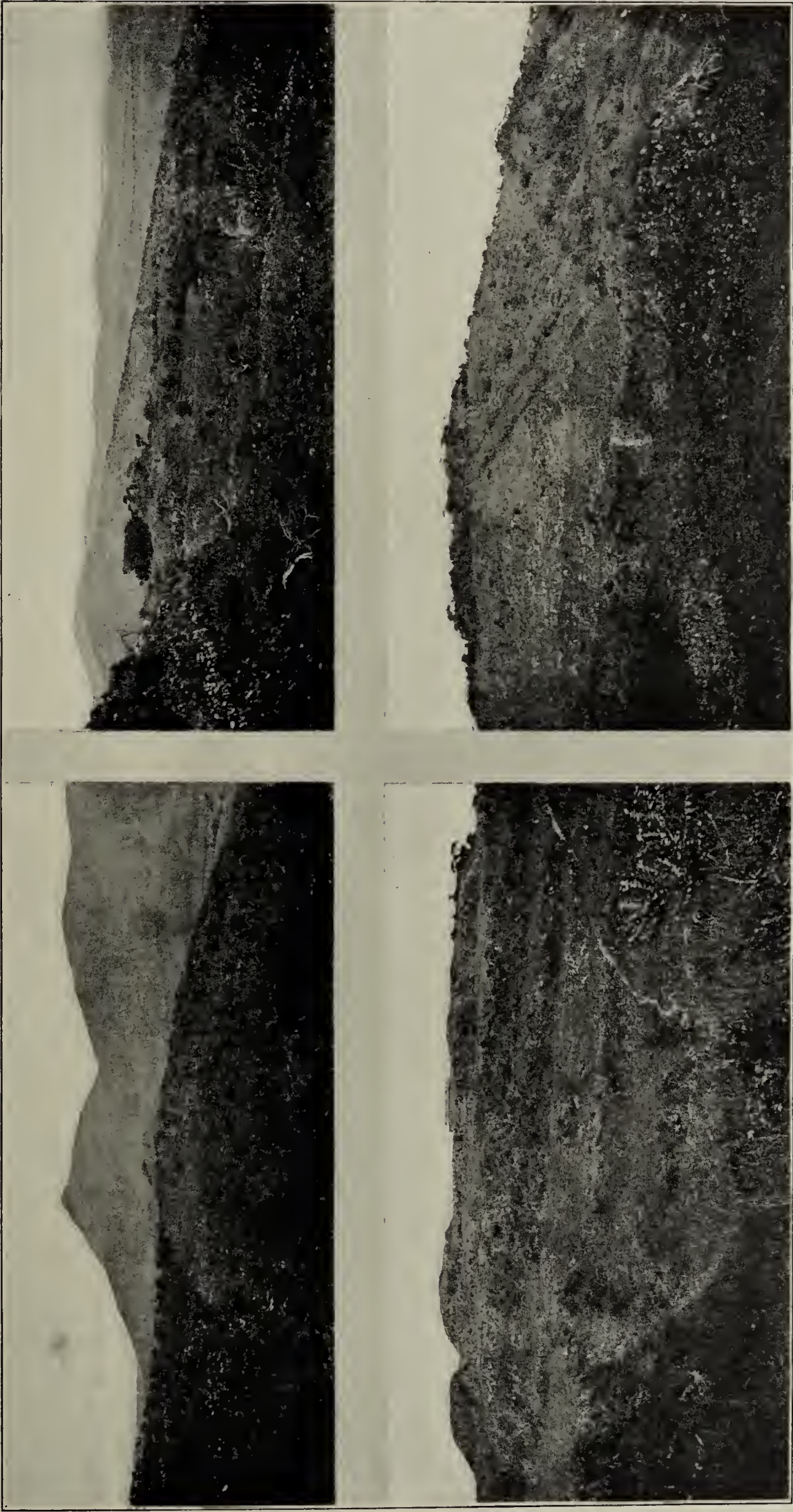


LAKES WHICH XOCHICALCO FACES—NOTE THE TERRACES IN FOREGROUND

Yet it is when we turn to the south that the stupendous scale and full grandeur of Xochicalco dawns upon us, for it is in this direction that the wonderful remains face, falling in a great series of sweeping direct and flanking terraces in the form of a hollow square ever widening as it descends to the lake which sparkles far below, and beyond which at a still lower level can be seen the clear reflections of a second and smaller body of water shining like a jewel in the diadem of the valley's verdure. Far beyond, the rampart of mountains is partially hidden by the purple mists of the distance that gradually blend with the clear blue sky and great white clouds of Mexico.

The terraces testify to a remarkable talent in their makers for what might have been called landscape gardening for the lack of a larger term and by their bold conception and vast size surpass anything of a similar nature that it has been the writer's fortune to view with the exception of the famous ruins on the Monte Alban in Oaxaca. The noted Borda Gardens of Cuernavaca, the palace grounds at Versailles, and the Borghese Gardens of Rome lack not only the superb situation but the imposing grandeur of the time-worn terraces of Xochicalco.

Such is in brief an outline of the scenic setting of these ruins which forms such an integral and important part of the whole, and without a due consideration of the prominence thereof in the minds of the original builders, and the manner in which their structures were adapted to and harmonized with it, we can form but a poor conception of their work. Unfortunately, in this respect it surpasses anything that we ourselves have as yet attempted. The western hill, containing, as before stated, the most important remains, is cut on the north by 4 terraces,—portions of which at least were faced with stone while the lower one was apparently originally surmounted by a stone wall,—the problem of military defense having been duly considered and given a place of prominence in the general plan of the



THIRD HILL WITH TERRACED SUMMIT FROM THE MAIN RUINS
 RUINS ON SMALLER HILL FROM ROADWAY ON ADJOINING HILL
 —SERIES OF PLATFORMS TO THE LEFT

FLANKING TERRACES ON SOUTHERN SIDE OF SMALLER HILL
 VIEW OF LARGER HILL FROM THE SMALLER WITH ASCENDING
 ROADWAY



FIRST TERRACE BELOW SUMMIT TO THE EAST—SMALL HILL

ruins. One of the upper terraces partakes somewhat of the nature of a ditch and was faced with rough masonry.

To the east the hill drops at an angle of about 60° to a terrace 20 ft. below, along whose eastern edge stand three isolated mounds beyond which it descends in a series of terraces to a square platform facing the saddle connecting the two hills. The grand causeway begins here, having been probably reached in early days by a monumental flight of steps. Then crossing this connecting ridge it leads upward to a somewhat similarly situated platform which it surmounts by dividing into two parts and ascending on either side, after which it again unites into a grand walled pathway, paved with smooth blocks of stone and sweeps upward in a direct line to the temple-crowned summit. Here it entered apparently through a gap in the wall into a great court surrounded by walls of loose masonry, while to the east in a series of gradations the remains arise to be finally surmounted by a small truncated pyramid which faced the cardinal points and was capped by a very limited cement platform. From this center the lower terraces fall regularly to all sides except the west to which the extra terraced court was added to meet the ascending roadway.

The general plan of these ruins like that of those on the neighboring hill faces the south.

The view from here in the days of Xochicalco's glory must have been superb, as it commanded not only the fertile valleys but the walls, terraces and temples that spread below on the summit of the sister hill, including the notable shrine that has done so much to give these ruins their principal fame. For though small in size—about 65 ft. on the east and west by 58 ft. on the north and south—its receding sides are nevertheless decorated with an exceedingly fine order of bas-relief in the form of what might be called, for the lack of better nomenclature, a great plumed serpent, though its

head undoubtedly partakes more of the lines of the conventional Chinese dragon than that of any known species of reptilian life. There are 2 of these designs to each of the 4 faces of the basic platform, the head of the serpent being at the corner and pointing inward with projecting tongue which is extended horizontally in the case of the ones on the front of the temple, and is dropped to a vertical position in the ones on the sides and back. The plumed tails lie towards the middle and are separated by two parallel lines with a cross work pattern between, except on the front of the



DETAIL OF DESIGN ON FRONT FACE OF THE TEMPLE

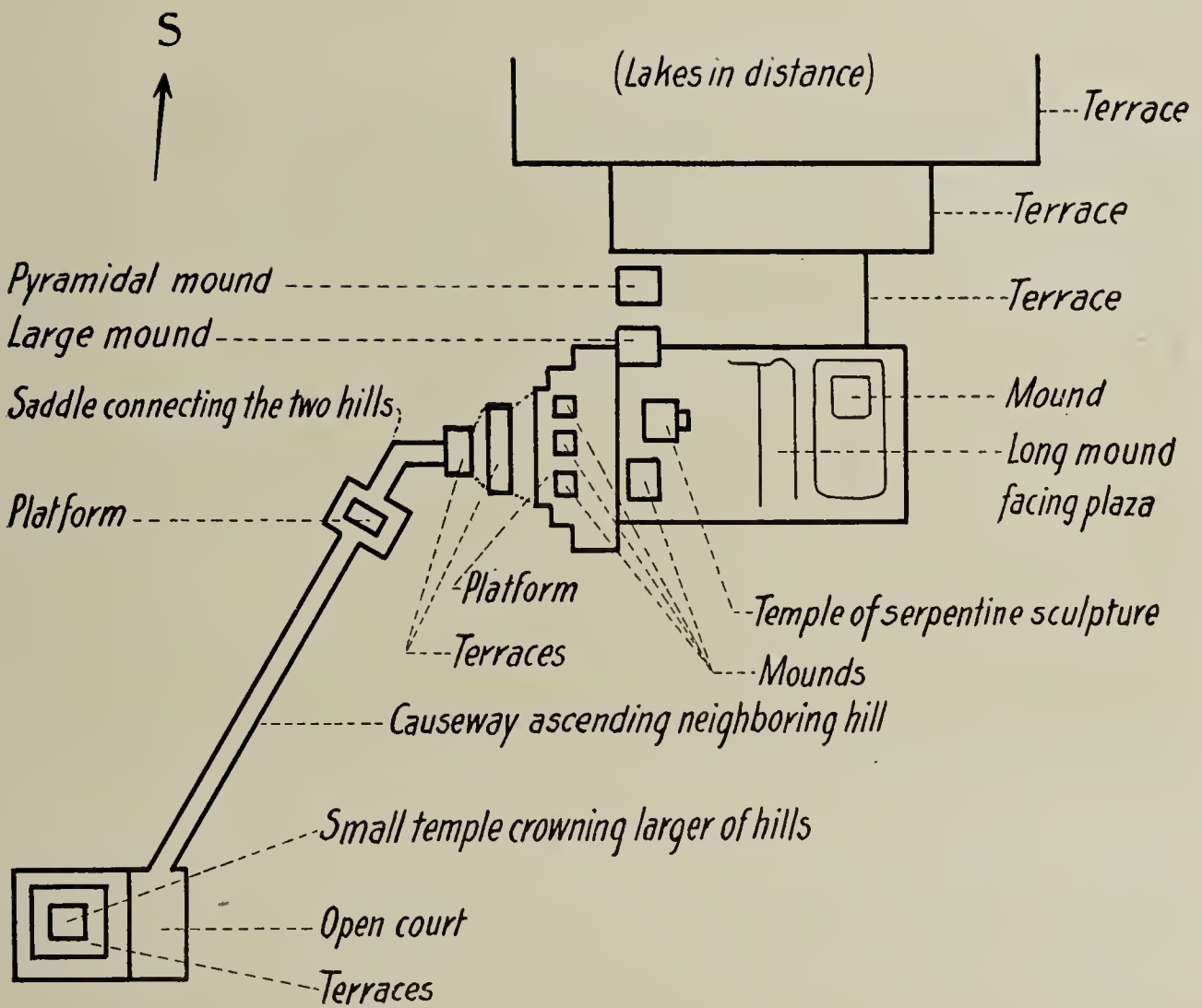
temple where they bend in a great circle until opposite the mouth, while a seated Indian with disproportionately large headdress and a bold profile is seated with legs crossed at intervals among its folds, and occurs on a smaller scale in the frieze. The forehead is receding if not flattened, the shoulders square and the waist line tapering. Necklace, ear pendants, bracelets and anklets are all in evidence and are of a striking and elaborate



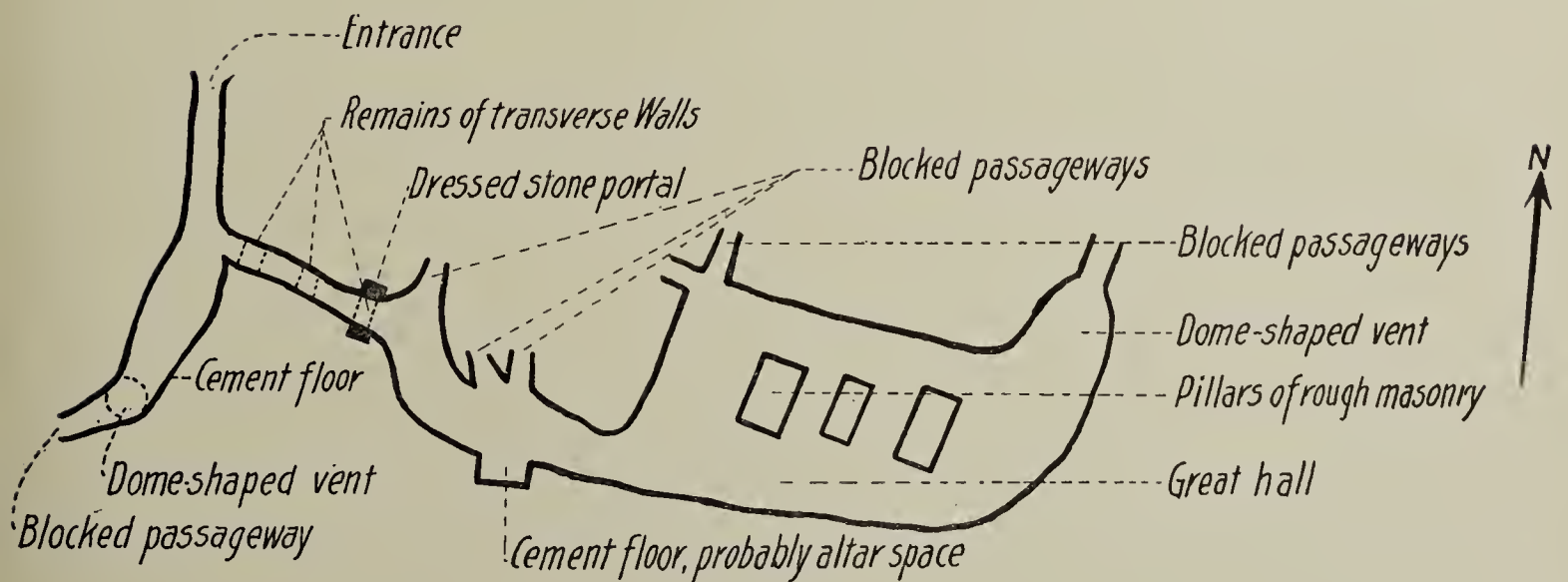
STRUCTURES IN THE MODERN PUEBLO OF XOCHICALCO—NOTE THE CONTRAST TO THE ANCIENT STRUCTURES

nature—while opposite the face appears a hieroglyphic design. The figures on both sides face the west or front of the temple and number two to each serpent or four to a side. On the back there are but two, each facing the head of the design which contains it—*i.e.*, one to the north—the other to the south.—On the front there are none. At intervals throughout the carvings hieroglyphic characters occur, but these are especially numerous on the frieze and seem to have been largely of a chronological nature. There is some similarity between these and the Mayan glyphs to the South, but many are apparently of a totally different nature,—and like the great serpents in a class by themselves,—while the seated figures display a strong resemblance in position and poise to a figure engraved in chalehinite from Ocozingo—and in profile, the style of the bracelets, anklets and necklace to the well known carvings of Palenque.

In front the serpentine folds are arranged and shortened to admit of a flight of steps that leads to the summit of the platform which, as restored, is enclosed about 2 ft. from the edge by a wall 4 ft. high with a perpendicular inner face and an outer one sloping at an angle of about 73° to harmonize with the carved walls below. Nearly all of the early writers including Humboldt, Alzate and Dupaix noticed the remains of what was probably a paint or varnish of a deep red color that was supposed to have formerly covered the sculptures. This, however, was not visible to the writer. The stonework is exceedingly well executed and of an admirable finish except where the hand of the restorer is in evidence, and was laid in courses with well squared corners—the designs being carved over the surface of the wall after its completion. Many of the stones, which seemed to be basaltic in their nature, are of a very large size and could only have been brought from their original quarries and worked by a people well advanced



PLAN OF THE SUMMIT RUINS OF XOCHICALCO



PLAN OF MAIN SUBTERRANEAN ROOMS AT XOCHICALCO



SINGLE SERPENT DESIGN ON SOUTH FACE OF THE TEMPLE

in civilized arts. A further description of the temple is useless as the photographs will clearly show the design and details.

To the right and left of this ruin are mounds which probably were formerly temple platforms faced with stonework of a lower order, judging from the glimpses the writer was able to obtain of it. However, there has been practically no excavation upon these, so it is nearly impossible to correctly judge of their exact nature and design, or whether they contain carvings of any extent. Opposite this row, on the western side of the inclosed plaza which measures about 275 ft. by 325 ft., is a long mound quite a little higher, and upon which a frame house with a stone addition has been erected by those in charge of the restoration—striking evidence that no work is contemplated in that locality in the near future. Back of this the hill rises and more mounds are in evidence.

To the south another mound faces a portion of the plaza which here falls away, as explained, towards the lakes. At quite a distance to the west upon the summit of a small outlying hill are the remains of another structure, while from one-half to three-quarters of a mile to the north a number of mounds are grouped upon a gentle swell in the valley's floor,—all that remains to-day of a probable village site.

One of the most interesting features is undoubtedly the subterranean passageway under the main group of ruins. About one-third of the distance down the northern face of the hill an opening leads into a chamber evidently cut out of or enlarged in the friable limestone rock which composes the body of the hill. From this lead two passageways—one ascending in a southwesterly direction for about 30 or 40 ft. and then turning to the right where it apparently ends. There is here a portion of a cement floor in evidence, and at the point where the excavation terminates its southwesterly course an air shaft rising from a cupola, neatly lined with rough masonry,



SEATED FIGURE ON THE NORTHERN FACE OF THE TEMPLE

ascends apparently to the surface. The other passageway turns in an easterly direction and passes through 3 stone walls that extended across it, evidently with the intention of barring the intruder's progress, and enters a larger space the general direction of which is southeasterly, bending more sharply towards the east at the end, and in its latter half swelling to the proportion of a large hall. This contains 3 great pillars of roughly laid irregular blocks of stone, the largest column measuring about 15 ft. by 8 ft., and displays a roof that at the present writing is of an exceedingly treacherous nature. There are in all 6 passageways branching off of this main hall and its extensions—4 to the north and 2 to the east. They have not yet been opened, being blocked with stone at present, but seem to lead toward the side of the hill. The great hall ends in one of the former corridors which diverges at right angles and which is securely filled with masses of rough masonry. At its entrance the roof again assumes a conical form extending upward into another air vent similar to the first one noted. Most of the side walls are faced with undressed stone of a low order, in this particular presenting a sharp contrast to the newly discovered subterranean at Mitla which in general excellence vies with the King's Chamber in the Pyramid of Cheops, and the lower subterranean ruins of Teotihuacan.

Only in one case did the writer note any dressed stone and that was at the point where the corridor opened into what might be termed the narrower part of the great hall. There the portals of the entrance were faced with blocks of well-squared basalt. A small excavation in the west wall nearby looked as if it might have been the site of an altar, especially as one of the passageways branched off immediately opposite. In the plaster in one of these walls the writer found portions of red pottery of an excellent finish and good texture.

Further down the hill is another small and much less important subterranean passage.

The contrast between the low order of masonry displayed in these underground galleries and the high development indicated by the temple of the serpentine carving is striking. The dissimilarity is so great that it would lead one to surmise that the latter was constructed at a much later period, which theory is further supported by its superiority to what we know of the construction, finish and also preservation of the surrounding ruins.

As the purpose of these remains undoubtedly had an important religious bearing the subterranean passageways probably had a similar signification, but the exact purpose of their construction—what lies at their end, and why the ancient inhabitants took such elaborate and laborious means to conceal their existence from future generations, and prevent their exploration, may long remain one of those questions which confronts the archæologist among the ruins of the New World, and which throws a glamour of romance over the crumbling walls, and hidden sepulchres of their makers.

Whoever were the original builders and whatever their end, we may safely conclude that the master mind or minds who planned the imposing approaches and the brilliant grouping and design of the buildings, and the patient hands that carved the folds of the great serpents have left a monument to their genius and industry which will shine throughout the years as a memorial of their ability in much the same manner as in ages past the sacred fires shone throughout the valleys and the distant hills from the summit of the temples of Xochicalco.

A. HOOTON BLACKISTON.



EXHIBIT OF PROFESSOR GARSTANG'S FINDS.—During the past summer there was an exhibit in the rooms of the Society of Antiquaries [London] of the previous season's work in Nubia by Professor Garstang. His work was at Meroe, where the remains of 4 temples were found. Nearly 80 graves in a large necropolis were excavated.

First to be noted in the exhibit were the life-size statues of an Ethiopian king and queen. They are executed in dark red sandstone, and show a distinctly negro-like type. They are inscribed with hieroglyphs in Meroitic script. Probably they are not older than 200 B. C. There is also the figure of a kneeling captive with his elbows tied behind him which is probably earlier. There are other blocks of sandstone with inscriptions, among them one containing 3 cartouches of Ark-Amen, ar Ergamenés.

There were also many varieties of pottery, varying in size and form from red vases in the form of gourds several yards in circumference to graceful vases hardly thicker than an eggshell, of light buff color, bearing a pattern in ink. There were also a number of grave stelæ, some showing Anubis, Horus or Thoth presenting the dead to Osiris. One torso of a woman strangely resembles Mexican images of similar type.

OPENING OF AN INDIAN MOUND NEAR SIOUX CITY, IOWA

SCATTERED over northwestern Iowa are great numbers of Indian mounds, generally near the rivers and creeks. Most of these ancient earthworks are small, but a few are large. Many small ones were formerly inside the limits of Sioux City, but have been destroyed by grading streets or in building.

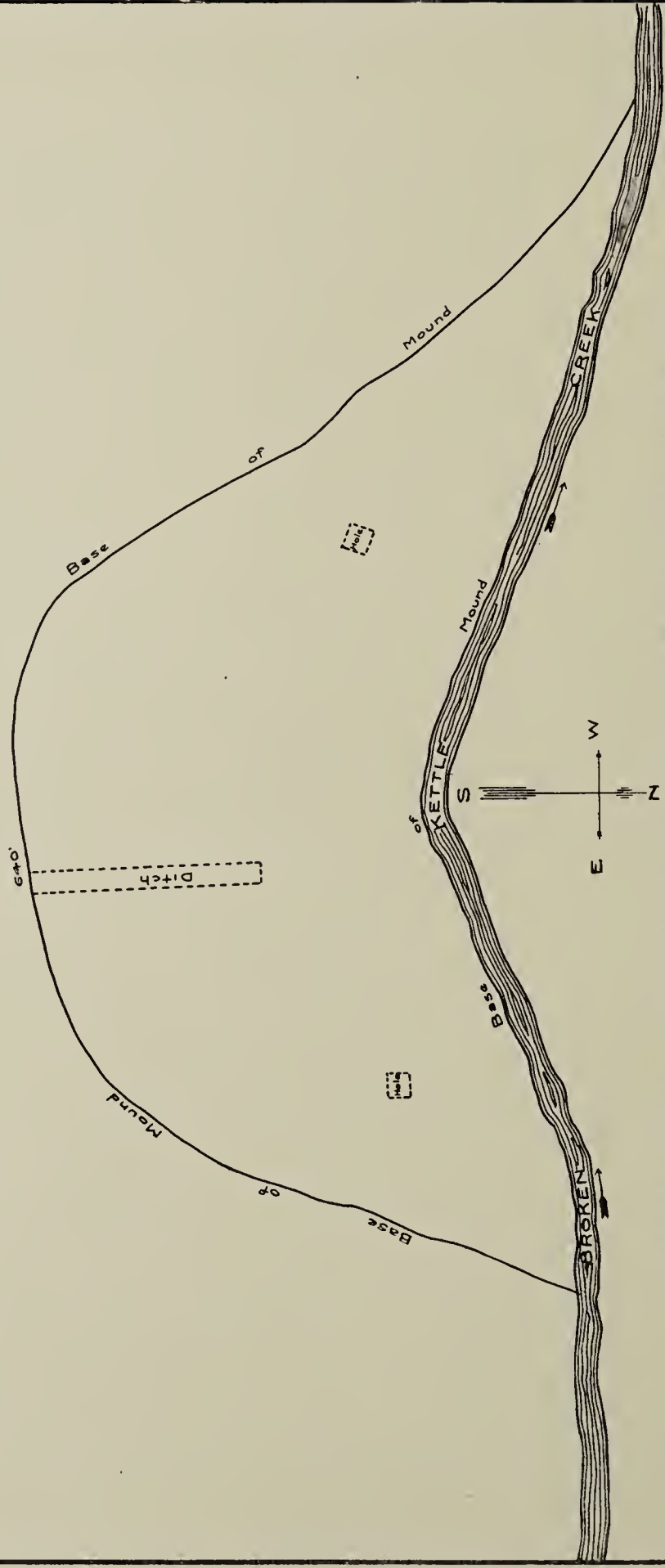
One of the largest mounds in this region lies about 12 miles northwest of Sioux City, on the bank of the Broken Kettle Creek which empties into the Big Sioux River, a mile below the mound. Much interest has been felt concerning this mound and its probable contents, by the members of the Sioux City Academy of Science and Letters. In the latter part of September, Mr. A. S. Garretson, a member of the Academy, took a party of men with a tent to the mound and spent 4 days in making excavations. The mound is in the shape of a crescent with the concave side next to the creek and is 360 ft. from point to point, 150 ft. wide and 12 ft. deep in the center. Beginning at center of convex side a trench 6 ft. wide was dug, 75 ft. to the center of the mound, following the natural level of the ground. Two other pits, 6 ft. square were dug down to the level of the ground, each about 40 ft. from the center towards the end of the mound. From these excavations were taken more than 4 bushels of specimens, consisting of broken pottery, bones and bone implements, carvings in stone, flint artifacts and clam shells. No human bones were found in the mound. These objects were scattered at random through the mound. I quote from the report of Mr. Garretson as to the construction of the mound: "Possibly 5 to 10 per cent of the bulk of the mound is composed of such refuse as I have mentioned, large quantities of earth, taken apparently from the bed and shores of the creek. No bluff soil was found in it and no excavation in the valley is apparent from which this earth was taken. I observed that ashes, bones and broken pottery were found in heaps or piles, associated together in quantities of about a half barrel. This circumstance indicates that these materials were brought to the mound from somewhere else."

The building of this mound must have required the labor for many years of large numbers of people who were settled in a village close to this work. All the refuse of such a village, consisting of ashes, bones and broken pottery, was thrown in with the earth required to construct so large a mound as this one. The object of those who built it could not have been simply to dispose of this refuse, but was probably to commemorate some important event, while perhaps some one or more of their chiefs may be buried under the mound. On the bluffs a short distance back from the creek are graves of thousands of Indians whose skeletons have been well preserved in the dry loose soil of the hills.

The pottery found in the mound is similar to that found all over the Eastern and Central States from the Great Lakes to Florida. It is nearly all ornamented with straight or curved lines incised with the point of a

PLAN OF INDIAN MOUND

IN W. 1/2 OF THE S.W. 1/4 OF SEC. 3 T. 90N. R. 48W.
SHOWING LOCATION OF EXCAVATIONS MADE BY
MR. A. S. GARRETSON, SIOUX CITY, IOWA.
PLYMOUTH CO. IOWA.



Distance from creek around base to creek 640 ft. Distance along creek at base 360 ft. Height at center, 12 ft. Erosion estimated to have been 4 ft., which has probably added to the original circumference. Diameter at base, from south to North, 150 ft. Length of open ditch dug, 75 ft., to center. Width of ditch, 6 ft. Two other holes, to original surface 6 ft. sq.

sharp stick or bone while the clay was soft. These lines are nearly always on the rims of the vessels but occasionally the whole surface is covered with them. Some have ears on them through which a bail of twisted grass might have been placed to carry the dish. Many fine bone needles were found that were made from large hollow bones split into numerous pieces and then sharpened on a piece of sandstone, several of these were found. Two specimens of carved stone were found, one the effigy of a bird and the other of a bear. The smaller one, the bird, is 4 in. long, 2 wide and 2 high. The wings are carved in bold relief, with deep lines on each representing feathers. In the back or top are two conical holes, $\frac{3}{4}$ in. in diameter at the surface, bored $1\frac{1}{2}$ in. deep where the holes are about $\frac{1}{4}$ in. in diameter and joined together. These two holes are as near alike as possible and I can see no way in which the object could have been used as a pipe, for there is no way by which a stem could have been attached. The larger of these effigies has these same conical holes in the back and joined in the same manner. This one is made to represent a bear. The hind legs are carved in bold relief with the knee cap in front as in the elephant and bear. It is 3 in. wide, 3 in. high, and $5\frac{1}{2}$ in. long without the head which is broken off. Both these specimens were limestone from the cretaceous rocks about here.

One flint implement is a very fine knife, 5 in. long by $1\frac{1}{2}$ in. wide, with parallel sides, and ends square with the sides. One side of this is beveled on all four edges making a knife edge all around. These three specimens are different from any I have ever seen or read of.

In a dry run near the mound was found a fossil tooth of the large extinct species of horse which in later Tertiary times roamed all over this continent, from Iowa to Florida. This specimen is almost perfect in every detail, and measures $5\frac{1}{2}$ in. in length by $1\frac{1}{4}$ in. square on the grinding surface, tapering very little to the other end. It is curved about 1 in. in its length.

These specimens have been deposited by Mr. Garretson in the museum of the Sioux City Academy of Science and Letters.

H. C. POWERS.

Sioux City, Iowa, October 14, 1910.



BURIAL GROUND AT BROADSTAIRS.—A burial ground found at Dumpton Park Drive, Broadstairs, England, consists of graves dug in the chalk subsoil at a depth of one foot. The bodies had, as a rule, been buried full length. Two, however, had been doubled up. Among the articles found were a lobed drinking-cup of green glass, an earthen urn and a small circular brooch set with 8 slabs of garnet. Among the glass beads were double and triple pearls; also amber and amethyst. The finds are similar to those at Sarre about 9 miles away.



SPHYNX PARTLY COVERED WITH SAND

A VISIT TO THE PYRAMIDS OF GIZEH Part II

AT THE end of the preceding paper we were describing the so-called "King's Chamber." We will next described the imperial way in which the wonderful architect constructed the roof of this chamber, which is the glory of the whole edifice. His task was no easy one; for he had to contend with the mountainous pressure of the solid mass of stone above it—it was over 300 ft. to the apex (the floor of the "King's Chamber" is $139\frac{1}{2}$ ft. above the base of the pyramid)—and yet make a simple flat ceiling for a room over 17 ft. in width, and not cover the void by causing the side walls to gradually approach as in the "Grand Gallery"—the room is too wide for that—nor by leaning blocks together in the form of a gable as in the roof of the "Queen's Chamber." The Egyptian architects seemed to prefer immense flat ceilings in all their work. So

nine colossal lintels of granite, each averaging 26 ft. 8 in. in length by 4 ft. 4 in. in width and 6 ft. 1 in. in height, and containing a mass of 700 cu. ft. and each weighing about 54 tons, were made to span the space. But the weight of the superincumbent core masonry above was not to rest directly upon these giant girders; 5 low relieving spaces, separated by 5 ceilings similar to the first, the top-most one, however, having the form of a gable composed of two rows of huge stones set against one another at an acute angle, were built for the purpose of discharging laterally the enormous vertical pressure from off the ceiling. The architect seems to have had the danger of earthquakes in mind. If these ceilings were broken, the downward pressure on their ends would probably cause them to form a series of gables like the top-most chamber instead of allowing them to fall into the chamber below.

In order to deceive would-be spoilers and keep them from knowing the whereabouts of the King's sepulchral chamber, a small opening (shown in the photograph) was left at one of the upper corners of the "Grand Gallery" leading into the lowermost of this series of relieving chambers. Earlier visitors, including the Arab spoilers themselves, did not know of this opening. It was first discovered by the English traveler Davison in 1765, and was then found to be clogged with the refuse of the bats which had inhabited the gallery since the Arabs forced an entrance centuries before. In 1838 Col. Howard Vyse worked a passage upward through the surrounding limestone masonry to all the other spaces. Today it is very difficult to reach these chambers, and for the ordinary traveler impossible. Only a few Egyptologists have had the hardihood to endure the close quarters and stifling air.

In the top-most of one of these garrets never intended to be entered, hidden away for so many centuries, safe from defacement and so placed as to be beyond all suspicion of its genuineness, Col. Vyse found the cartouches or oval rings, sought elsewhere in the pyramid in vain, which contained the royal names in hieroglyphics of Khufu and Knumu-Khufu. They were painted in red ochre and seem to have been the quarry marks which the masons had painted on these giant granite girders before they left the quarry. These names have been identified with the Suphis I and II of Manetho's lists. Knumu-Khufu is supposed by many to have been the brother and co-regent of Khufu, and did not succeed the latter as is confirmed by the length of the two reigns as given by Manetho, either 50 and 56 years or 63 and 66 years respectively. This discovery of Khufu's name within the pyramid fully substantiated its traditional ascription to this far off Pharaoh. It was a most important discovery from another point of view also. For this is the first Egyptian monumental record that coincides with historical tradition—the actual name of this first Pharaoh of the IV Dynasty being found on a monument ascribed to him by Herodotus. Contemporary monumental inscriptions date even from the time of Sneferu, a king of the III Dynasty, but here we have only the monuments themselves to rely upon.⁶ Lepsius says that Khufu's tomb is the monument "to which the first link of our monumental history is fastened immovably, not only for

⁶ The cartouches of kings of the I and II Dynasties found on many monuments are now supposed to have been placed there by later hands.

Egyptian, but for universal history.” The other two great pyramids of the Gizeh group have also been identified by contemporaneous inscriptions. Though that of Khafra—corresponding to Sefres of Manetho (whom he wrongly ascribes to the V Dynasty) and Chephren of Herodotus—itself contained no inscription, the cartouche of this Pharaoh was found on his portrait statue found in the ruins of the adjoining “Granite Temple” uncovered by Mariette and also on the fragment of a marble sphere found close by the pyramid and the temple. This pyramid is ascribed to him by both Herodotus and Diodorus. In the mortuary chamber of the “Third” pyramid, assigned by Herodotus to Mycerinus, there has been found on the lid of the rifled sarcophagus the cartouche of this Pharaoh “Menkare” (Menkaura)—the Mencheres of Manetho’s lists. Even the withered relics of a body supposed to be that of Menkare—though some think they are the remains of a mediæval Arab—were found in a neighboring passage in this pyramid and are now in the British Museum.

It was Abdulatif, the Arabian writer already mentioned, to whom we are indebted for the oft-quoted words “All things fear time, but time fears the pyramids.” But time has also done her ceaseless work here as well as on the exterior, where the top and the casing stones are gone and deep breaches made in the sides. The wonderful architect could plan to keep the weight of the upper masonry from crushing in the roof of the chamber under all normal conditions; but there was one thing against which he could not provide—earthquakes. Maspero and many other writers tell how for thousands of years the masonry of this roof has not yielded a hair’s breath; but the close inspection of Petrie has a different tale to tell. He has found that the whole chamber has been shaken larger, that the end-walls have sunk perceptibly—as much as 3 in. above in the relieving chambers—and that the side walls have visibly parted and consequently every beam of these upper spaces has dragged or has been torn out bodily from the wall on the south side, and every one of them has been broken on that side—the result of earthquakes. Some writers have assigned these changes to the effects of but one earthquake, that of 27 B. C. The beams today are held in place only by sticking and thrusting, and it seems only a question of time—decades of millennia it may be—before Khufu’s burial vault will finally be a mass of ruins. One of the uppermost girders is daubed with cement, as if this one at least had been broken even before the roof was finished.

Before leaving the interior one more passage should be mentioned. Just where the ascending passage forks, is seen the gaping mouth of a tunnel—about 21 by 48 in. in size which descends through the core masonry and rock until it finally opens into the descending passage just above where this enters the subterranean chamber. It was discovered in 1763 by Davison and its lower exit was found later by Caviglia, both ends having been plugged originally. This tunnel is still called erroneously the “Well.” But in 1831 Wilkinson found the explanation of this curious shaft. It was built as an after thought, as a means of exit for the workmen, who, after the priests had laid Khufu’s mummy away in his vault, slid the huge granite portcullis block—originally standing in the space between the ramps on the sides of the “Grand Gallery”—down into position at the lower end of the

ascending passage. After these blocks were finally in place there would be no outlet for the workmen. The architect seems to have forgotten this during the construction of the pyramid, and to have later bored this irregular hole through the masonry with no reference to the joints of the core. But just how the workmen could manage to get down this long and almost perpendicular shaft is a mystery. Its lower end was probably faced with a limestone plug like the stone concealing the entrance of the ascending passage, being of the same material as the roof of the long descending one. Treasure seekers and archæologists have sought in vain for other chambers in the "Great Pyramid." Besides the excavations of the Arabs already mentioned, Colonel Vyse in 1838 made a deep cut in the southern face, but without success. Mechanical evidences seem to prove a general focusing of architectural excellence in the whole structure toward the granite chamber of Khufu, in such a manner as to exclude the presence of any other rooms.

As has been said, only the descending passage seems to have been known in Roman days. However, the upper chambers show some evidence of having been rifled long before the Arabs entered them in the VIII century. A large piece of quartz was discovered beneath Khufu's sarcophagus for the purpose of tilting it up, which Petrie thinks must have been brought there before earthquakes had littered the floor with granite chips fit for the purpose. He thinks that this opening was made through the well shaft whose existence may have long been known by tradition, and that it took place sometime during the civil wars of the rival rulers of the VII to the X Dynasties, *i.e.*, about 3300 to 3000 B. C., when the statues and temples of Khafra, the son and successor of Khufu, were destroyed. Then it is probable that the lid of Khufu's sarcophagus and his mummy were removed from the granite chamber and the coffer and the statue of the problematical Knumu-Khufu from the "Queen's Chamber". As an historical parallel to this hatred of former rulers he adduces the violence offered to the ashes of the old French kings at St. Denis in 1790. There is also some little evidence that another opening was made during the Persian domination of Egypt, 525-333 B. C. But it may be as Herodotus and other writers have mentioned, that Khufu's body was never hidden at all in his tomb but was secreted elsewhere. Most modern writers, however, think that knowledge of these upper passages was first gained by the Arabs in the IX century A. D. when the Caliph of Cairo, Al-Mamun (813-833) forced a way into the interior.

The romantic story of this forced entrance has been told by many Arab writers. Al-Mamun was the son of the famous Haroun al-Raschid (765-809) known to every reader of the "Arabian Nights." His imagination was aroused by stories, current among his courtiers, of great treasures secreted in the pyramid. At last he was induced to undertake the almost hopeless task of finding a way into this mountain of stone. It is probable that he only continued the unsuccessful attempts carried on by his predecessors. Dionysius, the Jacobite patriarch of Antioch, who accompanied him, says (in the account of Abdulatif) that an entrance had already been made. Knowledge of the revolving stone door high upon the north face, which Strabo described, had been long since lost. The fact that on careful inspection it could not be found, is additional proof of the wonderful finish of the outer

casing. So a huge hole, 10 ft. from the ground and near the center of this face, some 35 ft. below the real concealed entrance, was hewn in for a hundred feet or more toward the center of the pyramid. Probably either a lingering tradition guided the Arabs in believing that this face was the entrance one, or the observed fact that most of the other pyramids had their entrances on this side. In lieu of explosives, only vinegar and fire were employed to loosen the masonry. The unwelcome task is said to have been abandoned several times, when finally the workmen heard the sound of a falling stone somewhere near them in the interior. They then turned their tunnel in the direction of the noise, and after excavating for 20 ft. they finally broke into the descending passage. The shaking of the masonry, caused by the repeated blows of their tools, had probably dislodged one of the plug blocks at the entrance to the ascending passage, or perhaps its limestone facing. It was impossible to remove these granite plug blocks; so the workmen burrowed their way past them through the surrounding softer limestone, and soon found themselves in the ascending passage above. This is still today the only mode of access to the upper chambers, as the portcullis stones have never been disturbed—and it is the roughest and most awkward part of the visit to the interior. The rest was easy. Some accounts tell how they found in the "King's Chamber" a stone mummy case cut in the form of a man and containing a body laden with jewels, which many writers still think was the mummy of Khufu himself. Others say that nothing of value was found, and so to silence the reproach of having spent so much money in vain, the caliph resorted to a cunning fraud. It is related that the workmen found an emerald vessel—which is said to be in Bagdad yet—full of gold coin amounting exactly to the sum total of their wages. Al-Mamum pretended to be much surprised that the ancient Pharaohs were so inspired as to be able to know just what Arab labor would be worth so many centuries later! Along with the treasure was also an inscribed marble slab which warned him to desist from further search!

After Al-Mamum's day the Arabs for centuries visited the interior of the pyramid, those, at least, who were able to overcome their fears; for the Arabic manuscripts tell horrible tales of the marvels which were to be seen inside—columns and statues of gold set with jewels, images of green stone, magic stones of various colors, mummies in golden coffers and even flaming eyed roosters. Sir John Maunderville, England's greatest traveler of the Middle Ages, who spent 32 years in the East and visited Egypt in 1350, was afraid to enter the pyramid because of the snakes reported to be inside. There also grew up in the Middle Ages a curious myth similar to that of the Lorelei on the Rhine, of a beautiful naked woman of great stature and pearly teeth who lived on the western side of the "Third Pyramid," and allured travelers from the desert, whom, after she had embraced, she deprived of reason. The myth is the subject of a well known poem by Moore. It probably grew out of the ancient story—told by Herodotus (ii 134)—of the famous courtesan Rhodopis of Naukratis, who was confounded with Rhodope the daughter of Menkaura, the builder of this pyramid.

The accurate geometrical design of the "Great Pyramid" has led to all kinds of speculations on its having been erected in conformity with cer-

tain fixed mathematical and astronomical calculations. Endless attempts have been made to discover the proportions supposed to be embodied in it, and so to prove that it had a symbolical significance. Most of these theories date from the time of Napoleon's expedition to Egypt in 1799-1801. One of the savants accompanying him, Jumard, took very careful measurements of the pyramid and displayed much more ingenuity than sense in attributing the proportions of the structure to some mysterious significance. Though the conclusions at which he and others have arrived are fantastic enough, still a few facts seem to be incontestable, a few of which it will be interesting to briefly mention.

The earlier pyramids, as those at Gizeh, are more accurately orientated to the cardinal points than the later ones. Thus the "Great Pyramid" deviates only 4' west of true north. As its corner sockets are only 12'' out of square—a most surprising degree of accuracy when we consider that the rock upon which it stands rises irregularly inside the masonry to a maximum height of at least 25 ft., thereby making diagonal measurements nearly impossible—we might have expected still greater perfection in the orientation. There is the same divergence in the "Second Pyramid." It is clear that the north point was later redetermined in the case of the "Great Pyramid," when the casing blocks were put on, but not so accurately as at first, for the core agrees more perfectly in orientation with the interior passages than the outside veneer—if we can judge from the few fragments of it left. This is a further indication that the careful supervision of the earlier architect was not kept up by his successor. This discrepancy from true north may be partly explained by the fact that the north point itself has changed somewhat in the last 60 centuries. Many investigators have attempted to date the building of Khufu's tomb by the position of some known star which would shine directly down the entrance passage at an easily computed date. Thus Alpha Draconis was in this position 2162 B. C. and the pole star in 2200 B. C., dates which are now known to be far too late.

That the original designer had certain geometrical formulæ in mind is clear. Thus the angle of declination in the slant faces was such that the original height of the structure was equal to the radius of a circle which would circumscribe the base; this is so accurate, and the same proportion is so equally true of Sneferu's pyramid at Medum—built by Khufu's father—that it is manifest that this proportion was intentional. It is furthermore confirmed by the presence of the numbers 7 and 22 in the number of cubits in height and base respectively, the ratio $22/7$ being an approximation to π . With these numbers the designer used 7 of a length of 20 double cubits for the height, 22 of this length for the half circuit of the base, making a rise of 14 on a base of 11. The floor of the "King's" chamber is exactly at the level where the area of the horizontal section is half that of the base, and its diagonal equal to the length of the base; the width of this section, therefore, is equal to half the diagonal of the base. It is also true that this section halves the vertical section of the pyramid. The floor of the "Queens Chamber" is placed at half this height above the base in the middle of the pyramid north and south. The same proportions are also visible in the construction

of the "King's Chamber;" here the perimeter of the chamber is a circle described by its width as a radius, and the length of the side is equal to the diameter of this circle. The granite sarcophagus is constructed exactly on the scale of one-fifth the size of this room, and its outside length is just one one-hundredth of the length of the base of the pyramid. On the ground of these few indubitable facts, all kinds of extravagant and ridiculous theories have been constructed.

After thus describing the exterior and interior of the Great Pyramid, we will next briefly discuss the various problems concerned with its construction.

The enormous amount of labor required to build it has always been the cause of much wonder. Herodotus, in his cursory account, says that 100,000 men, laboring together and being relieved every three months, consumed 20 years in the work. He adds that 10 more years were occupied in erecting a stone causeway for transporting the materials up from the base of the plateau. Remains of this roadway, paved with polished limestone, which was 5 stadia or $\frac{3}{4}$ of a mile long, 60 ft. wide and at the highest points 48 ft. above the inundating waters, are still traceable. It ends close to the eastern face of Khufu's pyramid. The Arabs partly restored it for use in removing the incrustation stones to Cario. Diodorus gives 360,000 as the number of the men employed for 20 years in building the "Great Pyramid." His computation is doubtless based on the 360 days in the old Egyptian calendar. Both the figures of Herodotus and Diodorus have been looked upon as purely mythical. But latterly Petrie has tried to explain those of Herodotus, as his is the more circumstantial account, by a consideration of the internal economy of Egypt today. The inundation of the Nile lasts for three months during which time all labor is at a standstill, and he thinks that this time was employed in the construction of the pyramid, thus explaining how so great a number of laborers could have been drawn from so small a country at one time. Skilled masons would be employed the whole year around, both at the quarries and at the pyramid itself, quarrying and dressing the blocks. He assumes that the workmen mentioned by Herodotus were merely the unskilled laborers who transported the stones. He argues that if gangs of 8 men worked together in transporting an average block of $2\frac{1}{2}$ tons *i.e.*, 40 cu.ft., and managed on the average 10 such blocks during the 3 months—bringing them from the quarry to the Nile, and down across the river in boats and up the causeway—100,000 men would handle about 125,000 such blocks in the given time, which would require about 20 years for the 2,300,000 average blocks composing the structure.

That much final work was done at the pyramids is proven by the remains of workmen's barracks, large enough to accommodate about 4000 men, which are still to be seen near the "Second Pyramid" where the stones were trimmed into shape. And though Diodorus says there is no trace of the hewing of stone around the pyramids, still vast quantities of chips—estimated at one-half the bulk of the pyramid—were thrown over the cliff to the north and south of the "Great Pyramid," thus forming an artificial enlargement of the plateau, extending for some hundreds of yards outwards from the rock's edge. These masses of chips are very interesting;

for they show peculiar stratification, according to the kinds of refuse thrown out at different times, strata composed of large chips alternating with those of smaller ones. Among them have been found fragments of clay water-jars and bits of wood and charcoal and even pieces of the very strings with which the workmen mended their baskets.

Though the execution of important details must have been in the hands of skilled workmen, the vast majority of the laborers was doubtless made up of men called from all sorts of occupations, such as the plow, the oar, the tending of cattle, etc. This explains the singular inequalities found in most Egyptian structures, in such marked contrast with the care everywhere displayed in Greek work. Those glorious buildings on the Athenian Acropolis—in bulk but sorry counterparts of these huge piles at Gizeh—show in all their details an equally careful design, executed almost as exactly and perfectly in the concealed parts as in the visible ones. One feels that the work throughout was entrusted to trained artisans, to men who were possessed of a love of beauty and felt a real pride in their efforts, which was wholly impossible under Egyptian conditions. Though we know the names of many Greek builders, we do not have the name of a single architect of these masterly constructed tombs. Hieroglyphic inscriptions will name with weary details the princes and nobles and scribes who had to do with the works of the Pharaohs, but never a word about the architects, or their able assistants, draughtsmen, sculptors or painters. These all lived humble lives, being classed along with carpenters, shoemakers and other artisans. Yet many of them produced incomparable works of art, like Khufu's tomb or the portrait statue of Khafra to be mentioned later. We now know exactly how one of the actual "bosses," who were in charge of the workmen engaged in building the pyramids, looked. A wooden portrait statue of Raemka, "superintendent of works" of that early period, was discovered during the excavations at Sakkara and is now in the museum at Gizeh. It so closely resembled the modern village chief that the workmen called it after him the "Sheik-el-Beled"—Sheik of the Village, a name by which it has been known among scholars ever since. The heavy muscular body expresses only vulgar self-contentment; the big head set firmly upon the thick neck, has, however, a look of great energy. The boss is represented in the midst of his laborers and has his staff in his hand ready for instant use. The life-like expression of this statue marks it as one of the masterpieces of Egyptian sculpture.

Many of the old writers record how the Egyptians were impressed into the service of Khufu and Khafra, who have been painted as the worst of tyrants and thoroughly hated by their subjects. Herodotus lays many crimes at Khufu's door; he closed the temples, forbade sacrifices and compelled the people to work on his tomb, and both he and his son Khafra were addicted to every personal vice. Diodorus also says the people execrated them both to such a degree that they charged their relatives to conceal their bodies elsewhere and not lay them away in the sumptuous tombs they had prepared. Herodotus says that even in his day the Egyptians were unwilling to mention their names, and so called their sepulchres after a shepherd, Philition, who used to keep cattle in those parts. Pliny says that they

erected them "to deprive their successors and rivals, who were plotting against them, of money, or perhaps for the purpose of keeping the people engaged." And Diodorus says that their architects deserve more admiration than the kings who built them. Their tombs have ever since been looked upon as monuments of despotic power and pride. Though there doubtless is some truth in the old tradition, still the fact that Khafra reigned so long after his father's death, and was able to construct a pyramid almost as large, makes it impossible to credit such stories literally. Common sense alone would suggest a higher artistic motive for such perfectly constructed monuments. And it is impossible to believe that a hated tyrant, even in ancient Egypt, could have impressed 100,000 unwilling workmen for so many years. On the contrary, undertakings of such magnitude bespeak a long era of peace and security. Such giant structures, just as the mediaeval cathedrals, could have been erected only when the whole people were completely dominated by one great idea, one great purpose. In the Middle Ages the controlling and impelling idea was furnished by religion—concentrated, bigoted and universally accepted; in ancient Egypt, it was the idea of monarchy—abject fealty and obedience to the will of an almost irresponsible master. And today—in the absence of both ideas—it would be as impossible to duplicate one of these huge piles of masonry as one of the great mediaeval churches.

In ancient Egypt there was no such regard for individual life as is felt in modern civilized countries. Even at the present day life in Egypt as all over the Orient, possesses but little value. Only recently the fellaheen were employed on the Suez canal under a system of practically forced labor, their strength being as mercilessly exhausted as though they were mere cattle. Said Pasha built the Sweetwater Canal at Suez in 5 years with the help of 25,000 peasants; 250,000 were used in building the Malmudijeh part of the canal for the space of one year; the hardships which they endured must have been terrible, since 20,000 are said to have died. We can safely assume that the ancient Egyptians were no more scrupulous than their descendants; but the impression that Khufu and Khafra were exceptionally merciless and brutal in their treatment of their laborers, seems ill founded. The size of their tombs alone would be sufficient to start such stories. We know from contemporary wall paintings that the discipline enforced by the Pharaohs was very severe, and we know that in the iron-clad caste system of old Egypt, the lot of the laborer was hard; but still there is little ground for believing in the wholesale oppression so generally imagined. On the contrary, instead of the labor entailed in such vast undertakings being ruinous to the people, the training acquired must have been beneficial to the national character, and employment, during the inundation, must have been a boon to impoverished thousands. It was Plato who said that tombs ought never to encroach upon ground from which the living could subsist. So it is no sign of the wanton disregard for the rights of their subjects that the Pharaohs, in a land where every acre of tillable land is so important, built these vast cemeteries on the edge of the desert.

Egypt had reached so marvellous a proficiency and dexterity in the arts 6000 years ago, that they still excite our astonishment. They could



DR. HYDE'S PARTY AT THE FALLEN COLOSSUS OF RAMESES II AT MEMPHIS

quarry huge blocks of the hardest stone, and transport them for many miles and raise them to great heights; they could polish granite and carve on this hard material, with the greatest ease, hieroglyphics of the minutest kind, long before steel was known; and they could sculpture most beautiful statues out of granite and harder diorite and basalt with amazing skill; even now with our modern tools it is difficult and costly to carve plain letters on any of these substances. Though many of the processes then in use are still unexplained, enough is known to dispel a great deal of the popular mystery attached to them.

In the first place let us consider briefly how such enormous stones were quarried. The sandstone quarry at Silsilis still shows many scars left by the workmen's tools which tell us their mode of detaching stones. The size of the block was first outlined in red ink, to indicate the form it was to take, *e.g.*, the head of a capital, or a statue; then the vertical faces were divided by means of iron chisels driven in perpendicularly. To detach the horizontal under face, wooden or bronze wedges were driven in the direction of the natural strata of the rock. At Syene, in upper Egypt, I saw a granite obelisk over 100 ft. long, whose underside is still undetached from the rock; at Tehneh there are many drums of columns only partially disengaged, the boring holes into which moistened wooden pegs were set, being still visible.

The blocks were transported in various ways. Many quarries, as the one at Syene, were literally washed by the Nile, so that the stones had merely to be lowered into barges or specially made boats, such as one which is depicted on a relief from Deir-el-Bahri. Elsewhere canals were dug to con-

nect the quarry with the river, as at Turah, whence most of the limestone of the pyramids at Gizeh came. The barges were thus brought to the foot of the cliffs. Wherever water transport was excluded, the stones were drawn on huge sledges either by men or oxen. If the road was difficult, oxen were used, as is seen in a relief from Turah dating from the XVIII Dynasty. The drivers in this case are Phœnician slaves, as we learn from the accompanying inscription. Men were used more often than oxen as the propelling power. A relief from the time of the Middle Empire shows how men were harnessed to sledges. This relief was found in the tomb of Thothothu at Bershah, and depicts a sledge containing an alabaster colossus of that prince—perhaps 20 ft. high—being dragged to his tomb. The statue is securely bound to the sledge by means of ropes, sticks being used to prevent slipping and small bits of leather being placed underneath as a protection against chafing. One hundred and seventy-two men are harnessed to four long ropes, so arranged that two men can grasp the rope at the same place. At the forward end of the relief are men carrying the ropes on their shoulders. An overseer stands on the knee of the statue and is shouting and clapping his hands in issuing his orders; another stands upon the base and appears to be sprinkling water on the road, while a third is offering incense. Alongside the sledge are men with water and a huge plank, who are driven along by overseers armed with long sticks. The relatives of the prince bring up the rear and the townspeople have come out to meet the procession which is presumably a rare occurrence in their village. Doubtless the stones of the pyramids at Gizeh were dragged in this fashion over the causeway leading from the Nile village to the Gizeh plateau.

Let us next consider how such enormous blocks were hoisted aloft into position. Unfortunately, we have no bas-reliefs or wall-paintings to explain the methods, and yet this seemed to bother Egyptian engineers very little. The few simple cranes to be seen on the tops of walls, in temple bas-reliefs, are manifestly inadequate for such undertakings. Judging from the difficulties experienced by mediæval and modern builders, it is hard to understand how the Egyptians with the few appliances at their disposal managed such masses. The greatest wonder however, is not afforded by the pyramids, but by obelisks and colossal statues. The largest obelisk in existence—that of Queen Hatshapshut at Karnak—is a monolithic granite block 109 ft. high, 8½ ft. in diameter at the base and contains 4873 cu. ft. of stone, weighing about 367 tons. We learn from the inscription upon it, that it was quarried, shaped, transported, engraved and erected all in the short space of 7 months.⁷ What contracting firm of the present day would undertake to duplicate such a feat! And yet inscriptions mention still larger obelisks. Rawlinson says in this connection; “It is doubtful whether the steam-sawing of the present day could be trusted to produce in 10 years, from the quarries of Aberdeen, a single obelisk, such as those which the Pharaohs set up by dozens!” Statues arouse even greater wonder. The giant statue of Rameses II in the Ramasseum at Thebes, sat 60 ft. in height and weighed no less than 1000 tons; another of this same Pharaoh of the XIX

⁷ *Hist. Ancient Egypt*, Vol. I p. 498.

Dynasty, found in fragments at Tanis, stood—according to the measurements of Petrie, its discoverer—90 ft. high without its pedestal, or 120 ft. with it. The two Memnons seated at the entrance of the temple of Amenhotep III at Thebes, measured 47 ft. in height, and each was hewn out of a single block of granite. It has been conjectured that the architects and contractors of the Pharaohs possessed very highly developed mechanical contrivances to make possible the erection of such huge stones. However, nothing has been discovered to corroborate such a view and no Egyptologist of today doubts that these marvels of transporting and raising into place such masses of stone were effected by one power alone, viz., the enormous expenditure of human labor. For the greatest tasks can be accomplished by the simplest means, if enough workmen and time can be used. They probably had no other help in lifting such masses than the simple devices of inclined planes of earth together with the use of ropes and sacks of sand. So the hoisting into place of the stones which composed such structures as the Temple of Karnak, now the most majestic ruin in the world, and these tombs of Khufu and Khafra should not excite our wonder, if the same workmen could raise such gigantic obelisks and statues as those mentioned.

The naïve astonishment so often expressed over the erection of these monuments should yield to the explanation which is to be found in the methods used at the present time in restoring the fallen columns at Karnak. For this is doubtless the same method which was employed when these columns were first erected. Inclined planes of earth are nowadays constructed, up which the stones are dragged. Just before the completion of an Egyptian temple, its interior must have been full of earth or sand even to the roof and the last task was to remove this solid "scaffolding." Similarly there must have been just such a solid embankment leading to each pyramid, over whose surface the stones were hauled, the pyramid and dike rising simultaneously. Even down to Graeco-Roman times, there were traditions of just such embankments. Diodorus, though sceptical about it, records that the Egyptians in his time said that they were composed of salt and saltpetre, which later melted away before an inundation of the Nile. Pliny, however, gives the tradition credence. Up these great inclined planes, then, the stones were dragged with painful slowness, doubtless by some such system of "rocking" as the one proposed by Petrie. The stones would be placed on two piles of wooden slabs, and then with the aid of crowbars, slowly "rocked" upwards, first one side and then the other being raised, the underlying piles alternately heightened and the stones advanced horizontally on rollers pulled along by men with the aid of ropes. If, for example, the largest stones, the roof girders of the "King's Chamber," each averaging 26 ft. in length and weighing 54 tons, were placed on two such supports only 2½ ft. apart, only about 5 tons would have to be lifted at one time at the end, an easy enough feat for 10 workmen armed with bronze bars. Plates of sheetiron would be used to ease the rollers and keep the crows from biting into the stone. The fragment of just such a plate was actually found in the mouth of one of the air-shafts leading from the "King's Chamber." Iron seems to have been known in Egypt, though not used to any extent, before the VIII century, bronze—an alloy of copper and tin known from

very early times—taking its place. Only a few bits of free iron, like the piece mentioned, could have been used at the time of Khufu, as his workmen would have had but little idea as to how to work it.

So the wonder is not how such stones could be raised into position, but rather how they could have been so carefully joined without injury to their edges.

Let us consider next for a moment the tools which the Egyptian masons of that remote time had at their disposal. We learn from bas-reliefs that sculptors in their ateliers used the toothed chisel, the drill and the gouge, and polished the surfaces of their sculptures with fragments of quartz. Even the points which dotted the work are often indicated. Hard stones, such as granite and diorite, must have been worked with bronze tools set with cutting points harder than the stone. Only 5 substances are known to be harder—beryl, chrysoberyl, topaz, sapphire (corundum) and diamond. Diamonds were, however, too rare and expensive, and besides are not found in Egypt; so, as sapphires are much commoner, it may be supposed that they were employed. Primitive people often cut hard materials by means of soft substances, such as horn or copper, by applying a gritty powder and thus scraping and wearing the surface away. Some are inclined to think that the Egyptians knew this method only, which was certainly used in working alabaster and other soft stones. But that cutting jewels were actually known seems to be sufficiently proven by fragments of bowls of diorite of Khufu's time, which have been found at Gizeh; here the hieroglyphics are not scraped in, but incised, as is evidenced by their edges being sometimes only $1/200$ th of an inch apart.

Just as these bowl gravers used jewel-pointed tools, so the saws which the masons used, must have been set with jewels, since grooves of uniform depth are visible in many granite blocks. That saw-blades were of bronze, is shown by the presence of green stains, found on the sides of the saw cuts in sarcophagi and grains of sand still left in them. These saws were both straight and circular, varying from .03 to .2 in. in width according to the character of the work. Some of the straight ones must have been 8 ft. long, since the sides of Khufu's sarcophagus, which shows several cuttings where the workmen sawed at wrong angles, thus causing them to draw the saw out and start afresh, are $7\frac{1}{2}$ ft. long. Parallel arc grooves prove the use of circular saws or tubular drills. They varied from $\frac{1}{4}$ of an in. to 5 in. in diameter; for many bits of stone of these sizes, the remnants of the core sawn around, have been found. Such tubular drilling was employed on a large scale in hollowing out granite sarcophagi; a series of holes was drilled close together, the cores and intermediate pieces of stone were then broken out, and the process repeated until the requisite depth had been attained and then the surfaces were polished with quartz. The remains of two such holes, too deeply cut, are still visible on Khufu's sarcophagus. With such tubular drills, the Egyptians did what engineers say cannot be surpassed today with the modern diamond drill. Often the drill would be stationary, and the block of stone would rotate, thus proving that the Egyptians understood the use of the lathe, which was employed extensively in hollowing out bowls of diorite. Enormous pressure was needed to force the drills and saws down-

wards; it has been computed that a pressure of one to two tons was needed to drive a 4 in. drill through granite. Few of these tools have survived to our time; with the exception of a dozen common masons' iron chisels, practically none. But their use is well attested by such work as has been described. Nor is it strange that so few of these tools have been found. Most of the iron ones, if lost by the workmen, would have been consumed by the slow process of oxidation; and the expensive jewelled ones doubtless belonged to the state and so were not likely to get lost. The bronze tools could have been remelted and used again and again, which would explain why none of them has been recovered.

It was in 1881 that the world was electrified by the discovery, in a secret rock-hewn chamber on the site of ancient Thebes in Upper Egypt, of the mummies of nearly all the Pharaohs of the XVIII to the XXI Dynasties. Among them were those of Rameses II (about 1347-1280 B. C.), according to some the very Pharaoh of the Israelite oppression, and of his father Seti I (about 1356-1347 B. C.), the builder of the great Hall of Columns at Karnak, perhaps the most impressive edifice ever erected. Their bodies were so well preserved that—to use Maspero's words—"Were their subjects to return to the earth today, they could not fail to recognize their old sovereigns." Though we can never expect to recover the actual bodies of the kings of the far away IV Dynasty—that of the pyramid builders at Gizeh—still we know how they looked in life. Though the statue of Khafra had long been one of the main treasures of early Egyptian portraiture, no portrait had come to light of his more celebrated father. But a recent fortunate discovery enables us now to view the actual face of Khufu and realize the energetic character of this the most ruling character of all Egyptian history. For in 1903 there was found in the excavations at the temple of Abydos an excellently preserved and exquisitely worked ivory statuette of this far off Pharaoh. The work is of extraordinary delicacy and finish, and shows that ivory carving was at its height at this early period. That it is really the portrait of Khufu is put beyond doubt by the fact that his name is carved on the front of the throne upon which he is seated. Its discoverer, Prof. Petrie, says of it (*Abydos*, Part II, p. 30); "The idea which it conveys to us of the personality of Khufu, agrees with his historical position. We see the energy, the commanding air, the indomitable will and the firm ability of the man who stamped forever the character of the Egyptian Monarchy, and outdid all time in the scale of his works. No other Egyptian King that we know resembles this head; and it stands apart in portraiture, though perhaps it may be compared with the energetic face of Justinian, the great builder and organizer." And in another place (*The Ten Temples of Abydos*, in *Harper's Magazine* for 1903) he says; "The first thing that strikes us is the enormous driving power of the man, the ruling nature which it seems impossible to resist, the determination which is above all constraint and all opposition. As far as the force of will goes, the strongest characters in history would look pliable in this presence. There is no face quite parallel to this in all the portraits we know—Egyptian, Greek, Roman or modern." Some years before, the French Egyptologist Mariette had found in a heap of rubbish at the bottom of a well amid the ruins of the "Granite Temple" at Gizeh,

together with 9 others, a life-size statue of Khufu's son and successor Khafra, the builder of the "Second Pyramid." This statue, not only remarkable, like the statuette of Khufu, for its great age—it is nearly 6000 years old—but for its majestic pose and wonderful finish of detail, is a masterpiece of the sculptor's art, carved out of a piece of polished green diorite. The Pharaoh is represented as seated upon a throne, his hands in his lap, his body seated firmly upright, and his haughty head thrown back with a look of pride. A sparrow-hawk, perched upon the back of the throne covers his head with its wings, the image of the god Horus protecting his son. The life-like expression, the wonderful modeling, the dignified pose and the technical ability displayed in carving all this out of so hard a substance as diorite—all unite in making this marvel of sculpture comparable to the best works of classical antiquity. If the cartouche on the throne containing his name were wanting, still we would know that this was the portrait of a Pharaoh from its royal bearing, which indicates a man accustomed to unlimited power. This was one of the numerous cult statues of Khufu and Khafra, which were preserved both at Gizeh and at Memphis in the Temple of Phtha, where visitors could see the features of the mighty pyramid builders as if they were alive. For the worship of both these Pharaohs continued for thousands of years, at least down to Roman days, as Strabo recounts.

The discovery of such masterpieces as these portraits throws great light on the antiquity of Egyptian art. It shows that the art which could produce such carvings in ivory and stone 60 centuries ago, like the art which produced the Sphinx and designed the pyramids, had already in that far off time arrived at a maturity which argues many centuries of growth and experience. How many ages must have preceded such maturity can only be conceived when we remember how slow the steps from barbarism to civilization have been in other countries. At the very dawn of her history, Egypt displays a wonderful degree of civilization. Tablets from the time of Sneferu, the father of Khufu, show that it was almost as well organized then, as it was at the time of Alexander's conquest nearly 40 centuries later. Nearly all branches of literature—the drama excepted—were already well developed. Systems of astronomy, theology, philosophy and society were already old; the hieroglyphic and hieratic writing already perfected. Architecture, sculpture and painting must have existed for many centuries, for in the works of the kings of the IV Dynasty, the glory of these arts was at their height. The skill in engineering and mechanics displayed in the tombs of these Pharaohs has never since been surpassed.

But even thus early, this civilization had ceased to be progressive and had become stationary. The past—as in China—soon began to serve as a model, and stagnation set in. This is particularly seen in the case of art. Originality and freedom at first characterized Egyptian sculpture and painting. The life-like statue of Khafra shows this, and even more the wonderful expression of the ivory statuette of Khufu, or of another, many hundreds of years earlier, of a king of the I Dynasty, also found by Petrie at Abydos in 1903, shows it. These ivory carvings in their absence of convention stand above all later Egyptian works of art. For very soon, sculptures, as well as painting, became shackled by conventional rules and so became immobile

Soon all Egyptian art came to be dominated by religious rules. But the artist, whether in chiseling or painting representations of the gods, came in time to be the slave of these conventions and was not allowed to change the methods handed down from his ancestors. Plato said that the pictures and statues in the temples of Egypt in his day were no better than those that had been made "ten thousand years" before. It was Wilkinson who said that Menes would have recognized a statue of Osiris in the temples of the last of the Pharaohs. For not a line in the sacred form was changed for thousands of years. Architecture—the Egyptian art *par excellence*—whether we see in it tombs or temples, reached its high degree of perfection in the Memphite period—in the time of the Pyramids. Even the art of building tombs in pyramidal form ended with the XII Dynasty—for those of Nubia are merely later and inferior copies of these earlier more perfect examples. Almost the very first pyramids erected were the most marvelous ones.

For so many centuries Egyptian civilization and art were so immobile, that it is only by the aid of the cartouches of the Pharaohs, that dynasties and periods of their civilization can be distinguished. The stages of development and decay so easily observable in any European nation each century are here scarcely discernible in 10 centuries. It would seem as if the eternal blue of Egypt's sky, the regularity of ebb and flow in the life of her one great river, were in some mysterious way in accord with this fixedness of her civilization. But we are only yet in our infancy in the study of this hoary culture. What has already been brought to light and studied, is comparatively very little, for the Nile valley has only just begun to give up its treasures. Maspero, indeed, has said that the soil of Egypt contains enough to occupy 20 centuries of workers. So what seems to us now in our imperfect knowledge to be fixedness and stagnation, may be due, in large measure, to our lack of knowledge, and some day Egyptian art may show degrees—however infinitely slow—of progress and decay.

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FRONT AND SIDE VIEW OF IVORY STATUETTE OF KHUFU FOUND AT ABYDOS
BY PETRIE IN 1903

From Petrie's *Abydos*, Part II.



STONE SQUARE—PROBABLY AN ALTAR IN THE MAZATEC COUNTRY

ARCHAEOLOGICAL REMAINS IN THE MAZATEC COUNTRY¹

THE Huautla road follows the Teotitlan river, crosses a number of dry water courses or barancas, continues on a nearly level stretch for some distance, then zigzags up the San Bernardino Sierra, 2,000 ft. above sea level. Mesquite trees, some small shrubs and different varieties of cacti are plentiful; the lighter varieties of the henequen or smaller ixtle are scattered here and there. Large patches of the hillside are stained, and there are other good mineral indications; some profitable mines may yet be found, though at present the spasmodic efforts at mining have not been successful in this vicinity. The vegetation increases as one ascends the Cumbre, becoming a forest of scrub oaks, some tall pines occurring in the more sheltered places, with the wind-swept exposed parts of the mountain bare. Nine thousand feet above sea level, near the summit, which is known from the supposed imprint of a large human foot in a volcanic slab, as La Cumbre de los Frailes, "The Summit of the Friars," are the first artificial works, consisting of some shallow ditches

¹ To be followed by *Archæological trips through the Mixteca-Popoloca Country*, and *Mitla as it is to-day*.

running in a straight line with the earth thrown on one side, giving the appearance of trenches, which they probably are, as some fighting occurred on this road.

On the San Bernardino slope the ground is loose, of a clayey nature but well mixed with small stones and rock dust. From San Bernardino to the Cumbre the soil is darker though the subsoil must be clay as is evident from the several deep cuts that have been dug to make the road. On the summit of the Cumbre the road bank on the left shows the different layers of soil; under the first, which is leaf mold and volcanic loam, may be seen a thin stratum of ash probably of the same date as the volcanic ash in the Petlanco basin, plainly seen near the blow holes of the Hot Springs. After passing the Cumbre the road rapidly descends with much the same vegetation prevailing for some distance until the clearings occur. Not far from the spring, on the comparatively level stretches there are what appear to be small artificial mounds. Like the small cairns and crosses that are occasionally found on this road as well as on others throughout the Republic, they are probably graves made in late years.

The first interesting archæological object is a large slab of rock evidently quarried at a considerable distance. It is well hewn and of about the same dimensions as the stone slabs found near Teotitlan and in the mounds on the banks of the Rio Salado near Tecomavaca. On the side of the road is a hole disclosing a larger opening that has been partly filled since it was uncovered. Plainly visible are the ends and sides of other slabs showing that the mound is probably the same size and of the same construction as those referred to, but part of the road running over the top has reduced its height. The excavation is recent. There is another similar mound also excavated before the descent of the Espinazo del Diablo begins.

An important mound is located on the Carlota Plantation. It is not large, having a circumference of about 40 ft. Successive cleanings and the different excavations have reduced its height. When first uncovered the rooms must have been below the surface; the slabs of stone used in its construction are much smaller than the Teotitecan blocks. Nearly 20 years ago, when it was first opened, it must have proven a rich find, for, according to the reports, there were many metal figures. Don Antonio Martinez, chief engineer of the Carlota Plantation, told me that the small silver animals were of fine workmanship. There were also other figures, and plates of slate with hieroglyphs, and a flat stone weighing about $\frac{1}{4}$ pound which was said to have been used as an ironing iron. Subsequent excavations have brought to light other objects of inferior value. The fact that the valley is good agricultural land and comparatively free from rocks in this locality may have led to its having been selected as a place for settlement, and the burial of a Cacique. An unusually large building site occurs in the vicinity and other smaller stone floors are to be found in several places.

The Mazatec country is a limestone region, especially Tenango, Chilchotla, Ayautla, part of San Juan Coatsospaum (which latter pueblo is Mixtec) and other localities. The earth mounds are nearly all covered with grass, and are isolated. The rainfall here is about 50 times greater than that of the Teotitlan valley and sandstorms are unknown so that the deductions made from the Teotitecan mounds are not applicable here.

Situated in those sections, the last to feel foreign influence, the stone squares or walls are distinctly dissimilar to any ruins of the surrounding tribes, and characteristically Mazatec archæological remains.

The stone square (or altar, which it may have been) situated at the lower end of Netzalmalcoyott is very similar to the one shown in the accompanying illustration, and represents the usual type. What their age is, it is impossible to say, but there are indisputable evidences of great antiquity.

The stone square is about 5 ft. long, $4\frac{1}{2}$ ft. high, 4 ft. wide. The limestone used in its construction consists of pieces broken from large stones and natural slabs. Although few of the blocks are square, nearly all show the work of the stone cutter. Cement is absent but the larger interstices are filled in with chips of the same stone. The first indication of its age is a large tree growing on the top; the second, the leaf mold at the base. But the strongest proof of great age is that newly broken limestone has a very white and glassy surface which retains its brightness for years though exposed to the weather; and the 4 sides of this block have lost not only their brightness, but their whiteness, and the rock has disintegrated to such an extent that fine dust may be scraped from the exposed sides of the stones with the finger nail. Although it is not a hard stone and the disintegration is not as great as on the top of some natural stones in the vicinity where the powder is very thick, it must have taken centuries to bring about these conditions, especially in view of the fact that while the rainfall is very heavy it is almost all perpendicular owing to the thick forest and underbrush; little rain patters on the sides of the square block, most of it sinking through the cracks at the top.

There is another square located near the former, somewhat larger and with a decayed tree trunk on the top.

A trip was made to the hot lands following a trail where one of the guides lost his life by stepping on a loose slab of limestone rock which dislodged a larger boulder that crushed him. Near the Narangal there are some indications of former habitation. In a clearing in the vicinity of Avendano's ranch is located the largest stone wall seen. The measurements are: 5 ft. high; 75 ft. long; 4 ft. wide. These figures are not exact. The wall is not straight but forms a slight angle at about its center. Another wall of similar dimensions lies close to the former.

Natural caves are to be found in many parts; the largest near the (Mazatec) pueblo of San Antonio extends over a mile underground. This cave was explored for some distance with the aid of ladders and ropes. Stalactites are suspended from the roof and stalagmites rise from the floor. A small stream fed by percolations from the roof runs through the cave. Close examination of the place where the water enters revealed a small dam, made of stones plastered with clay, which formed a little pool. Small pieces of charcoal were picked up on the flat surface of large boulders. Some of the large rocks were covered with black patches showing the location of former fires. A figure found here is $1\frac{3}{4}$ in. high, $\frac{3}{4}$ in. wide, and resembles a large thimble, being hollow and the sides shaved off by a sharp celt after it had been made and partly dried. The cuts are clean. A rude face and long hair is scratched on the top. This figure is probably an idol and



CUMBRE DE LOS FRAILES COVERED WITH SNOW

is a rare relic. A small celt with its sides chipped off was picked up in a hole in a rock with some natural pebbles. The dripping of water from the roof of the cave had caused the stones to work over one another and thus acquire a natural polish, yet several large flakes had been knocked off the implement, which was probably an unfinished celt of the smaller type. This was the only chipped stone picked up. On some rocks we noticed the well defined imprint of some animal such as a monkey—another rock had as many as 4 or 5 larger foot marks.

Another cave was visited twice; on the first trip it was entered by the light of large pine torches. Some cairns were uncovered, disclosing large skeletons lying at full length. Beside them a number of beads were picked up, and a large vessel of thick black pottery in the shape of a headless duck, its mouth being the neck. This jar had a coating of white cement as did the amphoræ-shaped earthen vessels of Teotitlan. Another grave produced a plate 14 in. in circumference of the most primitive make, showing the imprint of fingers and signs that it had been used over a fire. A few of the bones were petrified and loose ashes were mixed with the grave earth which was 4 in. deep.

On the second trip to this cave, I was accompanied by my friend Georg Von Rettegg. As the cave roof had fallen in giving the appearance of a hole, the descent was easy, but it was dark enough to compel us to use lights. My companion remarked that the atmosphere was heavy, and so it was, but being anxious to unearth some relics we continued digging. While in a stooping position the gas that filled the place overcame me; however, I revived and for once was discourteous enough to precede my friend, who tottered at my heels, gasping for air and very pale. Although this trip was not very productive we secured a shin bone and confirmed the reputation of the place as a haunted hole.

Such experiences occurred to several exploring parties in this region and in other parts of the state and should be a warning to others.

Mr. Edlo McCue, former Manager of the Carlota Plantation, told me that he visited some of the caves in the vicinity that were full of human bones and a few felics such as beads, etc. The skulls in these cliff caves are separated from the larger bones, and collections of bones thus separated were found in several of the caves. I examined a number of beads from this cave and found them to be about the size of those from other parts of the state. An idol similar to those of Teotitlan and the Mixteca had the legs drawn up in the usual sitting position. It was made of conglomerate which showed disintegration so that its original high polish could be seen only in specks. A large broken shin bone from the same source had a most perfectly executed design, the cuts were not deep but clean. Each design was about $\frac{3}{4}$ in. square interlocked in a string about 3 in. long.¹ Near the same source came a small clay cup. It had been placed in the cleft of a limestone rock, and, as Mr. McCue says, the rock had grown partly over it thus causing the partial closing of the cleft. The cup was thus locked up by the action of water over the cleft. If it is contemporaneous with the grave relics some idea can be had of their great age. Although not common, I have seen a petrified human bone thus imprisoned by the growing of the rock. This gentleman also spoke of numerous mounds to be found on the top of the cliff that overlooks Carlota. As the area is of the same extent and the situation impregnable—the location would seem ideal for such a people.

A custom among these people which still survives is the mixing of ground green tobacco with lime and placing it in the mouth to prevent snake bites and to ward off other possible harm. Large boulders by the wayside have artificial hollows on their even surfaces made by these medicine makers, the rubber used is a limestone, preferably an ordinary river pebble that is immediately discarded. Sunken places occur on flat rocks in the heart of the forest which may indicate that this was a very ancient custom.

Near the house foundations a number of what may have been metlapilles or rubbers with slightly tapering ends were picked up. The stone used was from foreign parts. Since the length was 9 in. and the ends were also

¹ See the similar but more simple design of P. xxxii, lower right hand corner, *Ruins of Milla*, *Bulletin* 28, Bu. Am. Eth. Smithsonian Institution.



CUMBRE DE LOS FRAILES SHOWING THE ROUND KNOB RISING 9000 FEET ABOVE
SEA LEVEL

highly polished by wear, it seems that their use was varied either as a pestle, or rubber, like a rolling pin, that crushes but does not roll, as necessity demands. Much larger stones of a spheroidal shape had two sides perceptibly worn; they were of granite and different kinds of close grained rock with a high polish. Their weight was about 10 pounds. Other stones of not so perfect a shape or polish were evidently used to deal blows with as well as to knead. Flat, irregular and in one case almost triangular stones averaging $2\frac{1}{2}$ in. in thickness, sometimes with only one side flat and varying in length and breadth from 8 in. to a foot, were lying uncovered on the house sites. The well worn and in one case slightly depressed center of these slabs is evidence that their use would correspond to that of the modern metate. A modern pestle for mashing peppers was picked up in the field where it must have been dropped by some passing native, likewise a number of broken bowls that cannot be associated with the ruins. Arrow points are scarce, only one broken head being found in the Tenango Section. The Indians claim that their former weapons were slings. We discovered numerous small round river pebbles, not of this locality, which could not be classed as anything but sling stones. These weapons still survive though they are rarely seen.

A single sea shell was found without any artificial marks; its presence with dishes, pestles, and celts in a large house site would seem to indicate that it was of value, especially in view of the fact that it must have been brought a great distance, the nearest place at which it could have been secured being many miles away near the sea coast. Beside the graves in

the caves mentioned, several bodies were placed in small clefts of the rocks, and under over-hanging rocks that could not have admitted the body entire. In these places the bones were all scattered over a small area, whether because of re-interment or separation of the different portions of the body as reported by Mr. McCue in the caves above Carlota, it is impossible to determine as no folklore refers to it. Some few beads were mixed with the dirt, but it is evident that the graves were unimportant; however, it may be interesting to note that small pieces of limestone (there is a singular absence of small loose limestones scattered here) with angles indicating that they must have been broken, showed unmistakable signs of disintegration, and this, with but slight if in some cases any exposure to the air.

An expedition made to the Agua Que Suena region was undertaken. The mountains separating Tenango from Chilchotla were crossed; the river was passed with but little of interest being encountered. The Chilchotla ruins were evidently nearer the plantations which we could barely see in the distance.

A peculiar spindle, the only one of its kind, was found. In general form and details it is lighter and more elaborate than the common spindle in use at the present time. Red clay was used in manufacturing; all red pottery is rare in Tenango.

To the hurried traveler it may seem that the Mazatecs bind their heads as Professor Star states in his ethnography of these people; this, however, is not the case. The occiput is certainly not deformed by artificial means as the Professor seems to think, nor does head binding seem to have been an ancient custom of these people. The skulls examined from the Ayautla caves and Tenango showed no such indications but were well formed and natural in shape.

Ayautla at the present day is a small village built at the foot of Cerro Rabon. In the material used and the type of the dwellings it differs slightly from the other Mazatec pueblos. Numerous limestone walls are to be seen running in and around the village. These walls have probably been there since the place was first settled, but the only object that could have caused their building seems to be the clearing of the streets of limestone rocks which are very plentiful. As already said, the ancient site of the town is further North, the foundations of the houses are numerous, and the exposed limestones are blackened with age. Being viewed from the road, it is impossible to say much about them, though doubtless they have been built at different times.

Several parts of the Mazatec country show, if not the actual occupation, at least the influence of the Zapotec and Aztec peoples. The rocky region of Tenango is perhaps the least affected by these higher civilizations, and in reaching this conclusion I take as a clue the character of the country.

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BOOK REVIEWS

THE SEA-KINGS OF CRETE¹

IN this very attractive volume, the author has presented a story of the result of recent exploration in the island of Crete which will be amazing to most persons who have not closely followed that work. The general public has believed that the history of the beginnings of Greek civilization was virtually told by Homer. But these investigations show that 2,000 years before Homer wrote, a high civilization flourished in Crete. The present generation has been one of great discoveries both in Mesopotamia and Egypt, but the astounding facts disclosed both at Nippur and Abydos have been fully equalled by Schlieman's discoveries at Troy, Mycenæ and Tiryns, and later still by these in Crete carried on by Italians, Englishmen and Americans.

Greek history as we have generally considered it began about 776 B.C. while everything before that belonged to the age of myth. The point at which fact began and myth retired has not yet been determined, nor will it probably ever be exactly determined, unless a key to the ancient script of Crete shall be found. In the period between 1873 and 1890 when the treasures of Mycenæ were disclosed it became evident that even that glorious period was only a survival of a still richer past which had its source and home in the island of Crete, and there are found the foundations of many legends which have formed so attractive a part of Greek literature. The Cretans claimed that it was on their island that Minos was buried, and it was this claim which gave them their reputation for falsehood which clung to them so long and was even mentioned by St. Paul.

A large number of legends gather about the name of Minos, and Professor Murray has plausibly suggested that it was a title rather than an individual name, as Caesar and Pharaoh were used by different members of the families. Thucydides speaks of Minos as being the first person who saw the advantage of a navy, and by its use scoured the sea of pirates and saved for his own provinces the revenue. But we are not left entirely to surmises in the matter, for: "Each of the Minoas which appear so numerous on the coast of the Mediterranean, from Sicily on the west to Gaza on the east, marks a spot where the king, or kings who bore the name of Minos once held a garrison or trading station. Their number shows how wide-reaching was the power of the Cretan sea-kings" (p. 10).

It is a fascinating record of legend and fact which opens up before us,—the story of the labyrinth, and that of Dædalus, to whom has been ascribed the invention of the auger, the wedge and the level. He it was who first made the labyrinth and was said to have been imprisoned in it afterwards. It was to escape from it that he constructed the first airship, propelled by

¹ *The Sea Kings of Crete*, by Rev. James Baikie, F.R.A.S., with 32 full page illustrations from photographs. Pp. xiv, 288., octavo. London, Adam and Charles Black, 1910. Imported by Macmillan Co., New York.

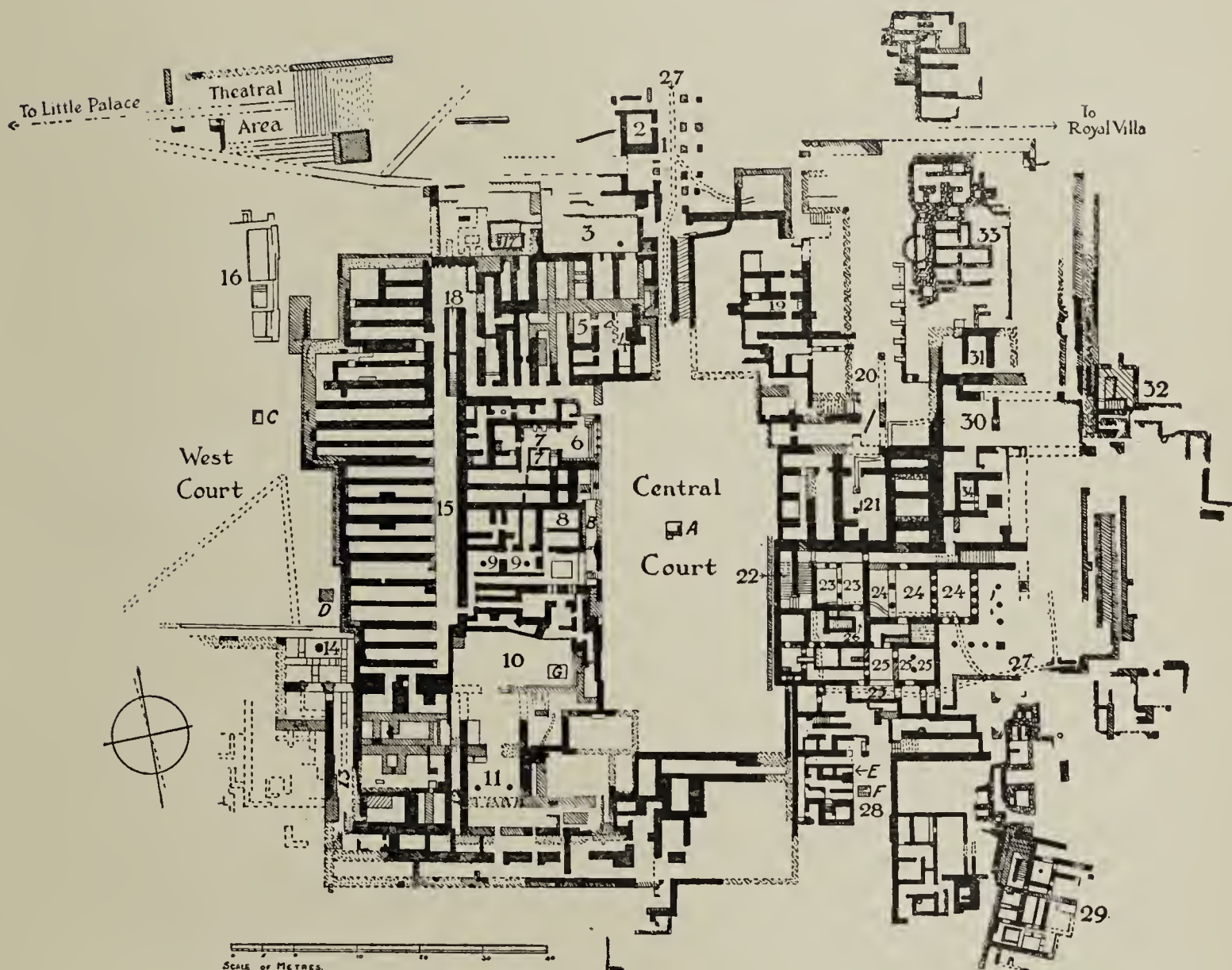
wings fastened on by wax, of which we read early in our studies. All of these stories help us to believe in an older civilization than that of which Homer writes, and from which the Greece of history has derived many of its traditions. "Crete sends 80 ships to the Achaean fleet at Troy,—100 cities says the Iliad; 90, says the Odyssey."

One noticeable fact comes out in the Homeric poems, namely, that woman then held a position equal to that which she occupies today. The names Penelope, Andromache and Nausicaa all show this to any one familiar with their stories, while in historic Greece women were thrown into the background as in all eastern countries.

From this aspect of the case we turn to the material where we find descriptions of at least three palaces of great splendor; even though in one of them Princess Nausicaa did oversee the family washing, and though Odysseus appears as a good ploughman and shipwright. This attention to detail work was also shown in their elaboration of metal work, as, for instance, the ornamentation of the shield of Achilles.

In 1895 Dr. A. J. Evans bought a part of the site of Kephala and from that time interest in the explorations grew. His attention had been drawn to Crete by the sale in Athens of some seal stones found in the island. These were engraved in characters entirely different from the Egyptian or Hittite characters. The Doctor hoped he might discover the key to the ancient Cretan writing, for he remembered that there had been a tradition in the island to the effect that the Phoenicians had not invented letters, but had only changed the form of those already in use. He began explorations in central and eastern Crete, and very soon began to find evidence of the presence of such script. This was "especially true in the Dictæan cave where a stone libation altar was found inscribed with a dedication in the unknown writing." Dr. Evans still held to the idea that at Knossos would be the most valuable finds. But it was not until 1900, in March, that he began exploration at that point. Then he employed from 80 to 150 men until June. Not even Schlieman's labors at Troy and Mycenæ were better rewarded. In a short time he had uncovered two acres of the foundation of a huge pre-historic building, and it was at once seen to be part of a palace. All over the space "neoliths" were found, sometimes buried to a depth of twenty-four feet, indicating a long occupation in pre-historic times. The author says: "But the neolithic deposit was not the most striking find. On the southwest side of the site there came to light a spacious paved court, opening before walls faced with huge blocks of gypsum. At the southern corner of the court stood a portico which afforded access to this portion of the interior of the palace. The portico had a double door whose lintel had once been supported by a massive central column of wood. The wall flanking the entrance had been decorated with a fresco, part of which represented that favorite subject of Mycenæan and Minoan art,—a great bull; while on the walls of the corridor which led away from the portal were preserved the lower portions of a procession of life-sized painted figures. Conspicuous among these was one figure, probably that of a queen, dressed in magnificent apparel, while there were also remains of the figures of two youths wearing gold and silver belts and loin cloths, one of them bear-

PLAN OF THE PALACE OF KNOSSOS.



From *The Sea-Kings of Crete*

ing a fluted marble vase with a silver base. At the southern angle of the building, this corridor—the 'Corridor of the Procession'—led around to a great southern portico with double columns, and in a passage way behind this portico there came to light one of the most fairly complete evidences of the outward fashion and appearance of the great prehistoric race which had founded the civilization of Knossos and Mycenæ. This was a fresco painting, preserved almost perfectly in its upper part, of a youth bearing a gold mounted silver cup (plate, vi.). His loin cloth is decorated with a beautiful quatrefoil pattern; he wears a silver ear-ornament, silver rings on the neck and upper arm, and on the wrist a bracelet with an agate gem." Thus "for the first time the true portraiture of this mysterious Mycenæan race rises before us The profile of the face is pure and almost classically Greek."

The southern portico led again to the central court adjoining which were magazines containing immense jars for corn and oil. These had all been



THEATRICAL AREA, KNOSSOS; RESTORED

From *The Sea-Kings of Crete*

rified at an early period. From this court again we come to "two small rooms connected with one another, in the center of each of which stood a single column marked with the sign of the double axe. They were apparently sacred emblems connected with the worship of a divinity, and the double axe markings pointed to the divinity in question. For, the special emblem of the Cretan Zeus (and also apparently of the female divinity of whom Zeus was the successor) was the double axe, a weapon of which numerous votive specimens in bronze have been found in the cave sanctuary of Dicte, the fabled birthplace of the god. And the name of the double axe is Labrys, a word found also in the title of the Carian Zeus, Zeus of Labraunda" (p. 70).

All this proves conclusively that this palace was the labyrinth which Dædalus is supposed to have built for his master. As one goes along the wall of the central court he reaches an ante-chamber which opens into another room. On the walls of this, frescoes begin to come out, pictures of griffins with peacock plumes adorn the entrance, and the side walls are decorated with flowering plants and running water. Here was evidently the heart of the palace—the council chamber—with a great seat composed of blocks of gypsum. The strangest part of it all is that the lower part of this seat is supported by an arch which is very suggestive of the Gothic arch. This is in all probability the oldest throne in the world. Here were found fragments of its former decorations—blue and green porcelain, gold-foil,

lapis lazuli and crystal. An agate plaque bore a relief of a dagger laid upon a folded belt, which was almost like a cameo in its beauty. In another room near this central court was found the fresco of "A Little Boy Blue." Even his flesh tints were blue, and he was picking white crocusses and placing them in a vase. The descendants of those same crocusses still dot the meadows of Crete to-day.

On the northern side of the palace was another portico, and it was here that they found the miniature frescoes showing the details of dress of this early people. It was here that the pictures of women with the fair complexion were first seen whose costume was the evening dress of the present time—low necked gowns, slender waists, hair elaborately curled and dressed.



GOLDSMITHS' WORK FROM BEEHIVE TOMBS, PHÆSTOS

From The Sea-Kings of Crete

On the north side was the real entrance, approached by a road leading direct to the harbor, three and a half miles distant. The road thither, and in fact all their roads, were even better made than the Roman roads. Here one very strange fact forces itself on the student, namely the lack of all adequate fortifications. This can be accounted for only on the supposition that peace ruled at that time on the island and no organized warfare was to be feared. This was doubtless due to the fact, before referred to, that Minos had first seen the advantage of a fleet, and by providing one had made his country safe and peaceful—an argument which our advocate of large navies might quote effectively; for, from the evidence, we learn that at last this navy was overcome and with it the kingdom's supremacy. Near this north

entrance was found the greatest artistic treasure—a plaster relief of a bull's head. "It is life size and modeled in high relief. The eye has an extraordinary prominence. Its pupil is yellow and the iris a bright red of which narrower bands again appear encircling the white toward the lower circumference of the ball. The horn is grayish blue."

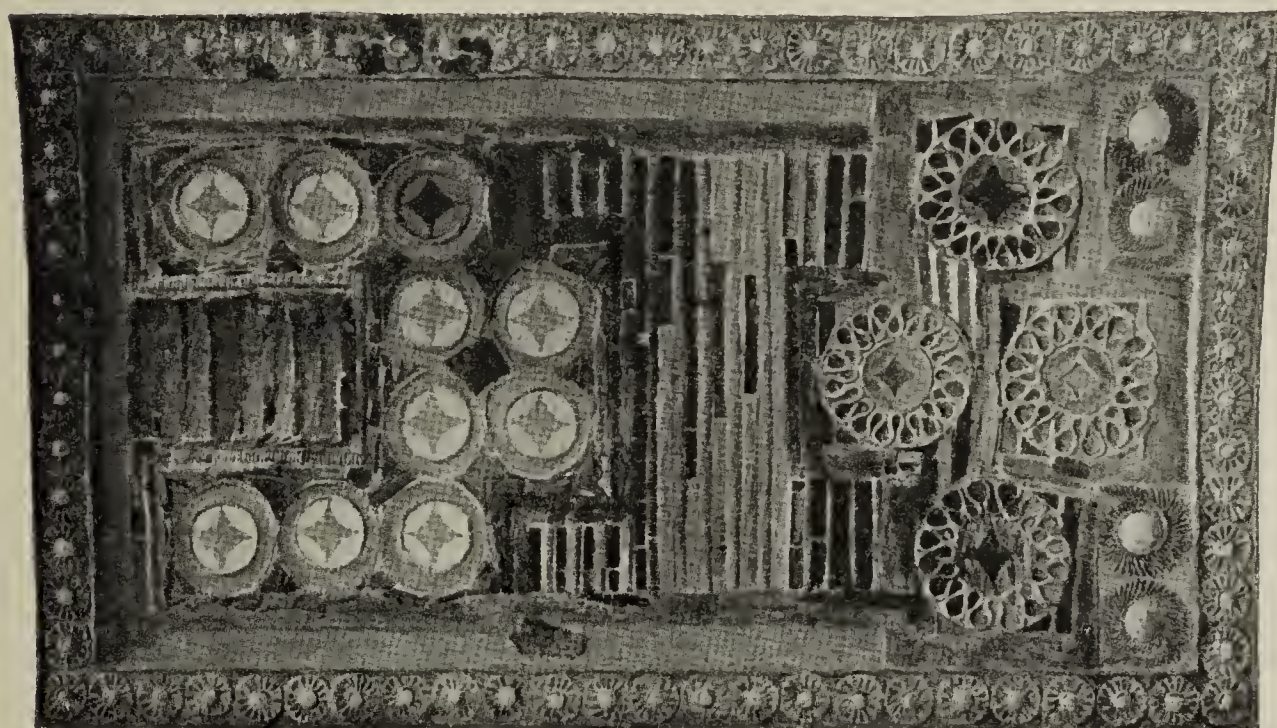
We have already referred to the finding of clay tablets some of which had evidently been baked by the fire which destroyed the palace. Here lies a theme for the student. Should some key to this script be discovered what secrets might not be unfolded. So it was proved that Dr. Evan's prophecy was correct, showing that Greek letters went back at least seven centuries beyond the first known historic writings. Here was found also the first evidence of communication between Crete and Egypt. The evidence is a part of a small diorite statuette of Egyptian workmanship, with an inscription in hieroglyphics which reads "Ab-nub-mes-Sebek-user maat-kheru" (Ab-nub's child, Sebek-user, deceased).

Still east of this central court was a mass of buildings constructed upon the side hill that story upon story emerged, these being connected by a fine stairway, of which thirty-eight steps still remain. In one of these lower levels they came upon a large colonnaded hall and "adjoining it was the hall of double axes already referred to (plate 17), 80 ft. by 26, and divided transversely by a row of square sided pillars." All these rooms showed evidences of fire, and in one room, evidently a sculptor's studio, the artist had been engaged in carving a stone vase, for it was only begun, while near at hand stood a beautifully finished one 27¼ in. in height and with a girth of six feet eight and three-fourth inches. Near here also was magnificent gaming board, which Professor Burrows says defies description, with its blaze of gold and silver, ivory and crystal.

The following season's work disclosed frescoes showing the darker side of the life—the bull fight, in which girls as well as boys took part. There are innumerable representations of this cruel sport, in which the human victims must have been numerous. These probably were prisoners, for later discoveries showed deep pits lined with smooth masonry which were evidently dungeons, from which captives were taken to the ring. The figure of Little Boy Blue gathering crocusses in the meadow is almost directly above some of these horrible pits. Again, connection with Egypt was found in the lid of an Egyptian alabastron near a bath room, on which was the cartouche of a king which reads "Neter nefer S'user-en-Ra, sa Ra Khyan." "These are the names of one of the most famous kings of the enigmatical Hyksos race—Khyan—the Embracer of the Lands as he called himself." In the British Museum is found one of his cartouches carved in granite which was found as far east as Bagdad. The statuette referred to before shows that the Minoans had communications with Egypt at the time of the Middle Kingdom. This goes to show that they were also in some sort of communication during the dark period of Egyptian history, between the fall of the Middle kingdom and the rise of the empire. Other vessels show a still earlier connection, even as far back as the early days of the early kingdom in Egypt. Among the finds may be noted a clay matrix showing that attempts had been made to counterfeit. Was not Solomon right when he said "there is nothing new

under the sun?" Beautifully carved ivory figurines were also found in a side room which were wonderful in the delicacy of the carving and in the accuracy of detail (plate 19). The plaques which once adorned a dower chest represent houses of two and three stories of good proportions even as measured by houses of well-to-do people of today. At Gournia, Mrs. H. B. Hawes unearthed a town showing practically just such houses, and here we are confronted with the fact that this ancient people had grappled with the drainage question and had worked out a system far surpassing that of Edinburgh at the end of the XVIII century.

The religion of this people would seem to have been symbolized by a snake goddess. Numbers of her figures were found; while near the supposed shrines of this goddess there was found the first cross made of veined marble. It had arms of equal length suggesting that the Greek cross of to-day is



THE KING'S GAMING-BOARD

From The Sea-Kings of Crete

the oldest form of that symbol. Professor Burrows suggests that one of the discoveries in a long corridor divided by rows of columns present the first idea we have of the Roman Basilica. One strange fact came out, namely, that the plunderers had left almost no piece of metal work, although the art had long been known and practiced. Fortunately, however, one room had escaped, probably from the fact that the floor gave way before the plunderers reached it. Here were found five magnificent bronze vessels, four large basins and a single-handled ewer.

Referring again to the connection between Crete and Egypt, both Herodotus and Pliny tell us of a Labyrinth at the mouth of the Fayum built by Amenemhat which corresponds well with this palace at Knossos. The probability is that they were both of the same age. Certainly there is little to show that one is earlier than the other, and so far as known they are the only such structures ever erected. All this makes it probable, as our author

has conclusively shown, that active communication existed between the two countries. In fact he claims that there was a much more general inter-communication between all known countries of antiquity than had been supposed before, giving as another piece of evidence the fact that a piece of white jade, a stone peculiar to China was found on the site of the second city of Troy, and that city was probably contemporary with the early third Minoan period. At Gezer Tell-es-Safi, Aegean pottery was found. Dr. Evans also found a purple gypsum weight at Knossos which compared with the light Babylonian talent and the ingots of bronze from Hagia Triada, all representing the same standard weight.

From all the evidence it would seem that, as in the Egypt of Amenhotep III, luxury crept into the Minoan kingdom and decadence forthwith set in. Just when the great catastrophe came upon it we have as yet been unable to determine. From what we can learn from contemporary history it was about 1400, B.C. Evidently it was sudden and overwhelming. In this presentation of the facts so far discovered the Rev. Mr. Baikie has certainly done the reading public a great service.

FLORENCE B. WRIGHT.



LIFE IN THE ROMAN WORLD OF NERO AND ST. PAUL²

PROFESSOR Tucker has aimed, in this work, to lead the reader to visualize the Roman citizen of 64 A. D. as a human being. He has endeavored "to realize more veraciously what life in the Roman world was like." To accomplish this end, the author first portrays the general conditions throughout the Roman Empire and then turns to the consideration of the home surroundings of an individual, following him through his education, various crises and an ordinary day of social life and amusement. Chapters on *The Army, Study and Scientific Knowledge, Philosophy* and *Roman Profusion of Art* follow, helping to leave the reader feeling in closer touch with the contemporaries of St. Paul.

The exposition of the contemporary view concerning St. Paul is instructive:—"To the philosophers at Athens he appears as the preacher of a new philosophy, and they think him a 'smatterer' in such subjects In his language they detected what seemed to be borrowed notions not consistently bound together, and they called him . . . 'a picker up of seeds'."

Concerning the persecution of the Christians he says:—"The early Christians were treated as they were, not because they held non-Roman views, but because they held anti-Roman views; . . . they appeared to convert men into dangerous characters. . . . The *intransigent* Christian refused to take the customary oath in the law courts, and therefore appeared to menace a trustworthy administration of the law. . . . He was a socialist leveler," and refused to acknowledge the statue of the emperor.

HELEN M. WRIGHT.

² *Life in the Roman World of Nero and St. Paul.* By T. G. Tucker, Professor of Classical Philology in the University of Melbourne. Numerous illustrations; 3 maps. Pp. xix, 453. \$2.50 net. The Macmillan Co., New York. 1910.

EDITORIAL NOTES

GIFT FOR GUATEMALA EXPEDITION.—A gift of \$7,500 has been made to the School of American Archæology, to aid in the expedition to Guatemala which is expected to take the field this winter.

TO REPAIR THE BALCONY HOUSE.—The Smithsonian Institution and the Colorado Cliff Dwellings Association have asked the School of American Archæology to take charge of the excavation and repair of the Balcony House in the Mesa Verde National Park. Director Edgar L. Hewett, Jesse L. Nusbaum, P. J. Adams, and Lewis B. Paton will have the management of the work.

DAMAGE TO CLEOPATRA'S NEEDLE.—Cleopatra's Needle on the Thames Embankment, London, has been so much damaged by the weather that it is proposed to remove it to some sheltered place. The obelisk in Central Park, New York, has been protected by a coating which preserves the surface, although it stands in the open air.

MUMMY OF THE RED SEA PHARAOH.—According to the *New York Times* a mummy discovered some years ago at Thebes in the tomb of Amenophis II proves to be that of Menephtah, the Pharaoh during whose reign the Exodus of the Israelites took place. His face bears striking resemblance to that of his grandfather, Seti I. The body had been carefully embalmed and showed evidences that the Pharaoh died a natural death.

MARKING THE SANTA FÉ TRAIL.—The legislature of New Mexico at its last session appropriated \$600 to assist the Daughters of the American Revolution in erecting markers along the route of the old Santa Fé trail. This will provide for a granite marker with inscription for each 10 miles of the trail from the Colorado line to Santa Fé. The marker nearest the county seat of each county traversed is to be larger than the others. The stones are to be set in cement bases. The counties have been asked to set these up at their own expense, all other expenses being borne by the Daughters of the American Revolution and the appropriation.

TEXTS FOUND BY DOCTOR STEIN.—“Among the texts in an unknown tongue lately brought back from Tun-huang by Doctor Aurel Stein and handed over to Doctor Hoernle for examination, were two Buddhist canonical texts of Sutras, in one of which he recognized the ‘Aparimitayuh Sutra,’ of which there is a copy in Calcutta and another in Cambridge, both written in Sanskrit and found in Nepaul. As these texts contain a number of mantras or spells together with rubrics or directions for their use, which, in Doctor Stein's text, are given in the unknown tongue, we should have here a bilingual that ought to give us the key to the mystery. Various discoveries in this region are linking themselves together and will in time probably fill up a gap in the world's history.”—[London *Athenæum*].

PLEISTOCENE CLIMATE IN FRANCE.—M. A. Laville in a recent communication to the Society of Anthropology of Paris raised doubts as to the presumed heat of the climate in the region of Paris in the Pleistocene period. Explorations near Paris form the basis for his opinions.

TO EXCAVATE CYRENE.—A firman has been granted to a representative of the Archæological Institute of America for the excavation of Cyrene. Such excavations were proposed early in the history of the Institute by Professor Charles Eliot Norton, but conditions have only recently become favorable. Funds to the amount of \$15,000 a year for 3 years have been pledged by members of the Institute for the early stages of the work. Allison V. Armour, of New York, Arthur Fairbanks, of the Boston Museum of Fine Arts, and D. G. Hogarth of the Ashmolean Museum, Oxford, constitute the committee to direct the undertaking.

The ruins are covered with soil to only a moderate depth. The site has been protected by its inaccessibility, and has been uninhabited for centuries. It seems likely that much of human interest will be revealed by the excavation of a few ancient sites.

SYLLABARIC INSCRIPTIONS FOUND ON CYPRUS.—On September 10, 1910, the Greek schoolmaster at Koukليا, Cyprus, discovered an accumulation of Cyprian syllabary inscriptions not far from the town. The next day he revisited the spot with Mr. Peristanis, honorary custodian of the Cyprus Museum, and in a short time picked up 34 stones bearing inscriptions. The character of these inscriptions differs widely from that of those found at Rantidi not far away. These stones from near Koukليا—the locality is called Tshira Philippa—are evidently hundreds of years younger than those from Rantidi, and are not incense basins as are the latter. Their character is similar to that of the 3 Cyprian syllabary inscriptions which were found in 1882 at the courtyard of the Aphrodite Astarte Paphia temple at Koukليا, which are not older than the IV century B.C. It seems likely that further investigation would reveal much of interest at Tshira Philippa.

POTTERY FRAGMENTS FROM PITS AT PETERBOROUGH.—Pottery fragments from the prehistoric pits at Peterborough were recently exhibited to the Society of Antiquaries [London]. These pits were of two kinds: small steep-sided with flat bottoms, or large and shallow with pointed or flat bottoms. The latter are saucer-shaped like hut-circles. They are 3½ or 4 ft. deep and 10 or 12 ft. in diameter, and are filled with reddish loamy gravel above a greyish layer at the bottom. The smaller ones contain flint implements, charred wood, pot-boilers and other traces of fire. The lowest level yielded thick brown ware, ornamented outside and within the lip—round-bottomed bowls of the Neolithic type. Above this line, many pieces of “drinking-cups” were present, better made, corresponding to the earliest pottery of the round barrows. The nearest parallels on the continent to this thick ware are in Fingland. The beakers were later, but possibly overlapped in time. They are similar to types on the Middle Rhine. This was the first important find of beakers as domestic vessels in England,

although there had been similar discoveries in Hadingtonshire. The absence of metal suggested the age as previous to the Bronze Age.

ANNUAL EXHIBIT OF EGYPT EXPLORATION FUND.—The Egypt Exploration Fund held its annual exhibit at King's College, in the Strand, London, during July. The results of Professor Naville's work during the past season at Abydos were there presented. One of the features was a perfect female skeleton from a predynastic grave, which was shown in a box of sand in the position in which it was discovered, with a red vase of the black-topped kind in front of her face. The most important part of the exhibit contains the objects found at Omm-el-Ga'ab, or the Royal Tombs. Among these were 3 painted mud figures of Osiris in mummy form. There were many jar-sealings from the tomb of Perabsen of the II or III dynasty, and flint knives of unusual shape and a curious instrument of flint with two sharp cutting edges like a fishhook. The use is unknown.

Work was also carried on in another cemetery, where a set of instruments used in the mystic ceremony of "Opening the Mouth" of the dead was found. The pottery board with holes for the various instruments shows the small jars of black and white stones and black and white knives. One water jar has been replaced by a jar from a smaller set; another instrument, the pink stone *pesh-en-kef* is wanting. This set seems to be from the VI dynasty.

SUMMER SESSION OF SCHOOL OF AMERICAN ARCHÆOLOGY.—The summer session of the School of American Archæology held in the Rito de los Frijoles Canyon during the past summer came to a close in September after the meeting of the regents of the New Mexican Museum, which was also held in the Canyon. At the meeting of the regents, over which Judge John R. McFie presided, plans were discussed and the work accomplished was reviewed. Among the gifts acknowledged was half of the Guatemala collection made at the expense of the St. Louis society.

In the forenoon before the business meeting, the regents, staff, students and visitors made a tour of the caves, cliff and communal houses—from the cavern in which the mummy of a young girl wrapped in cloth rests as it was found, to the ceremonial cave. The caves are well preserved. In the stone floors are still embedded the willow loops which were part of the ancient looms. Interesting pictographs appear on the cliffs.

The canyon—its name means Little River of the Beans—is enclosed by high walls of rock and is accessible only by a steep foot trail. The houses along the cliff were in good condition, needing only clearing and slight repairing. At the foot of the cliff is a circular ruin, called Týuonyi by the natives, which is now about half uncovered. It appears to contain as many as 250 rooms. A layer of 4 or 5 ft. of alluvial soil covers the ruins. If, as has been suggested, this is a wind deposit, the ruins must be very old. Many rare specimens have been found and transferred to the museum at Santa Fé. Much glazed pottery was found, proving that the inhabitants knew how to glaze their ware.

The ceremonial cave at the western end of the settlement has been restored. Ladders and stairways have made it accessible to the visitors.

It had two floors, between which were corn husks and charred corn together with stone and bone implements.

The students of the School were fortunate in being able to combine the theoretical and practical side of their studies in such surroundings. Many chose to sleep in the cliff-dwellings themselves, while others used tents or slept in the open. Lectures were given in the evening on the work of the day.

As a realistic climax to the summer's work, on the evening after the regents' meeting the whole cliff was illuminated by bonfires on top and candles in the cliff-houses while some 15 of the Indian workmen performed the Eagle, Dog and Sioux Scalp dances in the courtyard of Tyuonyi.

INTAGLIO MOUNDS OF WISCONSIN.—The January-April, 1910, issue of the *Wisconsin Archeologist* contains an article by Charles E. Brown on "The Intaglio Mounds of Wisconsin." Sixty years ago Doctor I. A. Lapham described and figured 9 of these interesting earthworks. All but one have now disappeared, though another was barely discernible as late as 1907. All seem to have been effigies of the "panther" type. They were always near other aboriginal earthworks. As the name implies, they were excavations rather than true mounds. The dirt dug out was piled up around the edges, helping to emphasize the outline.

The only intagliomound known to exist at the present day is about one mile west of Fort Atkinson, Wisconsin. "It is a monument of such character that one does not contemplate it without being stirred by a deep interest in its hidden significance and in its prehistoric Indian authors. It lies today upon a fine carpet of greensward, and is headed toward the west, its great depressed body paralleling the road the two rounded hollows which represent its limbs reaching to within a few feet of its edge. From its western extremity the best view of it is obtained. With the exception of a small portion of the tip of the tail, which has been disturbed by the plow, every portion of the figure is apparently as well defined as when first viewed by its discoverer more than a half century ago.

"Its greatest depth (at the middle of the body) is slightly over two feet. The great tail of the animal reaches to within about 25 ft. of a fine, large conical burial mound. The mound is at the present time about 50 ft. in diameter and about $4\frac{1}{2}$ ft. high. It has been plowed over several times in the past and is reported to have been previous to that an even more conspicuous monument than it is today. It and the intaglio are the only two earthworks which survive of the interesting group once located at this place. Remnants of one or two others remain along the roadside on the neighboring properties. Every trace of the others has now disappeared. The needless destruction of some of these is due to a lack of intelligence and of public spirit on the part of their owners."

In 1905 the Fort Atkinson Chapter of the Daughters of the American Revolution leased the property to preserve the intaglio. Later the lease was renewed for one year, but in 1910 the owner refused to renew, and therefore a movement was set on foot to arrange for its purchase and permanent preservation. A considerable sum has already been subscribed for the purpose.

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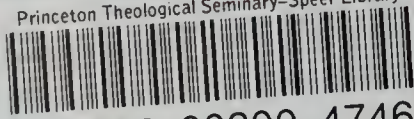
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